

**Chesapeake Utilities Corporation**  
**Before the**  
**Delaware Public Service Commission**  
**Docket No. 07-\_\_\_\_\_**

**DIRECT TESTIMONY**  
**OF**

**Paul M. Normand**

**Gas Depreciation**  
**Delaware Division**



**MANAGEMENT APPLICATIONS CONSULTING, INC.**  
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**DIRECT TESTIMONY OF**

**PAUL M. NORMAND**

**I. INTRODUCTION**

**Q. Would you please state your name, address and business affiliation?**

A. My name is Paul M. Normand. I am a Principal with Management Applications Consulting, Inc., 1103 Rocky Drive, Suite 201, Reading, Pennsylvania 19609.

**Q. Please describe MAC.**

A. MAC is a management consulting firm which provides rate and regulatory assistance including depreciation services for electric, gas and water utilities.

**Q. Would you please summarize your education and business experience?**

A. This information is contained in the attached Schedule PMN-1.

**II. PURPOSE OF TESTIMONY**

**Q. Please discuss the purpose of your testimony.**

A. Our consulting firm has been retained by Chesapeake Utilities Corporation ("Chesapeake" or "the Company") to conduct a new depreciation rate study of its Delaware Division gas properties.

**Q. What are your responsibilities in connection with this filing?**

A. I am responsible for planning the study, delineating and coordinating data collection, ensuring the accuracy of the data and properly reflecting any accounting adjustments for

1 a depreciation rate study. Beyond data collection, I am also responsible for the  
2 performance and interpretation of statistical analyses and the preparation of appropriate  
3 schedules to reflect the results of the depreciation study as presented in Schedule PMN-2.  
4

5 **III. DEPRECIATION STUDY**

6 **Q. Have you prepared an exhibit summarizing your study?**

7 A. Yes, the results of the depreciation study are shown in a report entitled, "Chesapeake  
8 Utilities Corporation Depreciation Rate Study for the Delaware Division Service Area –  
9 Depreciation Accrual Rates Based on Gas Plant in Service at December 31, 2005" ("the  
10 Depreciation Study") identified as Schedule PMN-2.  
11

12 **Q. Please explain the overall depreciation model utilized in your Depreciation Study.**

13 A. The Depreciation Study developed accrual rates which are defined as the straight line  
14 method, broad group procedure, and average remaining life technique. The remaining  
15 life depreciation accrual technique is the net sum of gross plant less depreciation reserve,  
16 plus or minus a net salvage, all divided by the average remaining life.  
17

18 **Q. Are the contents of the Depreciation Study true and correct to the best of your**  
19 **knowledge?**

20 A. Yes. The depreciation rates I am proposing are the result of a detailed analysis of the  
21 Company's investment in plant and are reasonable and equitable.  
22

23 **Q. When was the Company's last depreciation Study?**

1 A. Chesapeake's last depreciation study for the Delaware Division was completed in 1990  
2 by Stone & Webster Management Consultants, Inc. by Mr. William K. Strand and was  
3 based on property as of December 31, 1989. Appendix D of the Depreciation Study  
4 presents the summary accrual rate schedules for Chesapeake's last depreciation study.  
5

6 **Q. Is the depreciation model from your study consistent with the Company's last**  
7 **study?**

8 A. Yes, it is.  
9

10 **Q. Are the Company's current accrual rates based on these prior studies?**

11 A. The results from the prior depreciation study and PSC Docket No. 90-14, Order 3299, are  
12 the current accrual rates being used by the Company.  
13

14 The Company's current approved composite accrual rate is 4.11% using plant balances  
15 ending December 31, 2005 and is greater than the composite result calculated from using  
16 the proposed depreciation study composite accrual recommended for this docket for the  
17 Delaware Division of 3.50% as shown in Schedule B of Schedule PMN-2.  
18

19 **Q. Are you familiar with the National Association of Regulatory Utility**  
20 **Commissioners' definition of depreciation?**

21 A. Yes. The definition of depreciation adopted by the National Association of Regulatory  
22 Utility Commissioners (NARUC) is:

23 *"Depreciation", as applied to depreciable utility plant, means the loss in*  
24 *service value not restored by current maintenance incurred in connection*  
25 *with the consumption or prospective retirement of utility plant in the*  
26 *course of service from causes which are known to be in current operation*

1                   *and against which the utility is not protected by insurance. Among the*  
2                   *causes to be given consideration are wear and tear, decay, action of the*  
3                   *elements, inadequacy, obsolescence, changes in the art, changes in*  
4                   *demand and requirements of public authorities.*  
5

6                   Another commonly referenced definition of depreciation is that of the American Institute  
7                   of Certified Public Accounts (AICPA):

8                   *Depreciation accounting is a system of accounting which aims to*  
9                   *distribute the cost or other basic value of tangible capital assets, less*  
10                  *salvage (if any) over the estimated useful life of the unit (which may be a*  
11                  *group of assets) in a systematic and rational manner. It is a process of*  
12                  *allocation, not of valuation. Depreciation for the year is the portion of the*  
13                  *total charge under such a system that is allocated to the year. Although*  
14                  *the allocation may properly take into account occurrences during the*  
15                  *year, it is not intended to be a measurement of the effect of all such*  
16                  *occurrences.*  
17  
18

19                  The two foregoing citations are found on Pages 13 and 14, respectively, of "Public Utility  
20                  Depreciation Practices," August 1996, by the NARUC Staff Subcommittee on  
21                  Depreciation.

22  
23       **Q.     What is the purpose of the periodic book depreciation rate studies, such as that**  
24       **which you performed for Chesapeake?**

25       **A.**     Consistent with the definitions above, the purpose of depreciation studies is to develop  
26                  depreciation accrual rates reflective of engineering judgment, current industry and  
27                  specific company experience, and current projections for the future, relative to the  
28                  particular depreciable assets under study. The objective of depreciation as an element of  
29                  the cost of service is to provide for the appropriate and equitable recovery of the  
30                  investments in depreciable assets over a life term that assures the full recovery of the

1 investments less estimated net salvage. Net salvage is the gross salvage less those costs  
2 relating to the removal or retirement of assets.  
3

4 **Q. What procedures did you employ in compiling your depreciation studies?**

5 A. The first was to create the depreciation study databases. Chesapeake provided us with  
6 the necessary property accounting history, additions, retirements, plant balances,  
7 adjustments and transfers to create a complete database history. Chesapeake also  
8 provided recent plant account level gross salvage and removal cost history. In addition, I  
9 inspected the actual physical plant of the Delaware Division's operations.  
10

11 **Q. Please continue.**

12 A. I analyzed the historical data using computerized statistical routines and evaluated the  
13 output by considering the indications from the statistical analyses, input from  
14 Chesapeake's management, the character of the depreciable assets, knowledge gained  
15 during property inspections, my experience with like assets, and engineering knowledge  
16 and judgment. Final calculations were then made to develop the recommended  
17 remaining life accrual rates for each category of plant as shown in the Depreciation Study  
18 (Schedule PMN-2) sections entitled "Schedules" at Schedule A.  
19

20 **Q. You referred to "statistical analyses." Please explain what is meant by this term.**

21 A. I am referring to the Simulated Plant Record (SPR) life analysis method, a well known  
22 and well accepted method employed in depreciation studies. This analysis is used as a  
23 tool to assist us in the estimation of investment life. An SPR life analysis can be

1 performed whenever there is an adequate volume and frequency of additions and  
2 retirements.

3  
4 SPR life analyses are known by some as "semi-actuarial life analyses." The SPR-  
5 Balances (SPR-BAL) analysis used in these studies is an iterative procedure in which  
6 certain values (survivor factors) from empirical survivor curves (Iowa curves) are applied  
7 to the Company actual, recorded annual capital additions to generate theoretical surviving  
8 year-end balances. The procedure identifies the empirical curves that best simulate the  
9 actual ending balances in a specified band of years. As an example, the bands of balance  
10 years simulated in these studies were primarily 10 years (1996 to 2005), 20 years (1986  
11 to 2005), 30 years (1976 to 2005), and 40 years (1966 to 2005).

12  
13 The Iowa survivor curves used in our analyses were developed in the 1930s at Iowa State  
14 University; they are empirical curves whose equations are published, along with tables of  
15 various values, e.g. survivor factors at various ages. Iowa curves are widely accepted in  
16 the industry as a common and convenient means of communicating and calculating  
17 technical depreciation parameters.

18



1 The SPR life analyses of property history can sometimes provide us with an estimate of  
2 the historical life of plant investments, possibly a starting point in the life estimation  
3 process; however, it must be noted that life analysis is not life estimation. Unfortunately,  
4 life analysis can only provide an indication as to what has happened in the past. Our need  
5 is to estimate what will occur in the future; i.e., we must predict the future, not merely  
6 measure the past.

7  
8 **Q. Did you provide any output from your SPR analyses in the Depreciation Study,**  
9 **Schedule PMN-2?**

10 A. Yes. A detailed analysis and output of the two largest plant accounts consisting of Mains  
11 and Services were provided in the Appendices. This detail included the databases used  
12 and the SPR analyses developed from this data which identified and ranked the various  
13 service lives and associated Iowa curve types. These two plant accounts alone represent  
14 approximately 73% of Chesapeake's depreciable plant as shown on Schedule A of the  
15 depreciation study.

16  
17 **Q. Did you employ any other analyses other than your SPR life analyses to assist in the**  
18 **life estimation process?**

19 A. Yes. I also reviewed the pattern of annual additions to and retirements from the plant  
20 accounts to determine the relative volumes of capital activity. These volume changes can  
21 often assist in explaining why mortality analyses indicate life and/or curve changes.

22  
23 **Q. In preparing your life analyses, you previously stated that you also considered input**  
24 **from Chesapeake. What type of information did you consider?**

1 A. I conferred with Chesapeake management to determine if there were any occurrences,  
2 changes in policy, procedure, equipment, or practices which might impact upon service  
3 life, salvage, or removal cost associated with depreciable assets. The major consideration  
4 was to determine whether indications of the past would likely be representative of the  
5 near-term future.

6  
7 **Q. Your answers to previous questions indicate judgment and experience are**  
8 **significant elements in life estimation and in the interpretation of statistical analyses.**  
9 **Do other depreciation experts and authoritative sources concur?**

10 A. Yes, the literature is unambiguous on this point. For example, on page I.1 of the New  
11 York State Department of Public Service publication, "Computer Supported Property  
12 Mortality Studies," published in 1971, states:

13 *The purpose of an actuarial mortality study of public utility property is to*  
14 *make a statistical determination of a representative life table and average*  
15 *service life. The method used to derive these quantities in this report is*  
16 *that of smoothing and extending the retirement ratios.*

17  
18 *It must be clearly understood that the computer procedure explained in*  
19 *Section II accomplishes electronically only those computations which have*  
20 *had to be done manually, and nothing else. Because of the computer's*  
21 *large storage capacity and extremely fast running time, it is able to*  
22 *calculate a great deal more than has ever been obtained manually in the*  
23 *past.*

24  
25 *The computer exercises no judgment, reflects no opinions or company*  
26 *policies and does not forecast the future. The computer programs are*  
27 *merely the results of applying certain mathematical formulae to a set of*  
28 *statistics obtained from accounting records – and, based on these data*  
29 *and formulae give an indication of what has been the retirement*  
30 *experience of the past and what would be the future life pattern if the same*  
31 *experience were constant over the entire life of the surviving property*  
32 *under study.*

33  
34 *Under no circumstances should it be construed that a specific indicated*  
35 *service life and life table developed by this computer process must*  
36 *necessarily be used as the life table and average service life in arriving at*

1                   *a final estimate of annual and accrued depreciation. Stress is placed on*  
2                   *the fact that the selected life table and average service life finally used,*  
3                   *whether or not developed by program PSU-2 or PSU-2A must be the*  
4                   *engineer's best estimate for the property under study.*  
5

6   **Q.     Can you provide other citations?**

7   **A.     Mr. Alex E. Bauhan, the person who developed the SPR-Balances Method of life**  
8           *analysis, cites the need for exercising judgment in his paper in which the Balances*  
9           *Method was introduced to the industry. In his paper, given in April 1947, to the National*  
10          *Conference of Electric and Gas Utility Accountants of the American Gas Association*  
11          *(AGA) and Edison Electric Institute (EEI), under the heading, "Multiple Indications," he*  
12          *states:*

13                   *The method reads the past and not the future, and has no way of telling*  
14                   *which patterns will be followed in the future. Neither the actuarial or any*  
15                   *other statistical process can eliminate this dilemma. Only by the exercise*  
16                   *of reasonable judgment, or by the passage of time, can a selection be*  
17                   *made.*  
18  
19

20           In discussing the Retirement Experience Index, regarding the situation where the index is  
21           "poor or valueless," Mr. Bauhan states:

22                   *In all such cases, for estimating purposes, the result of the analysis should*  
23                   *be discarded and a judgment figure should be substituted in place of it. In*  
24                   *those cases where the experience index is only fair, the result should be*  
25                   *examined critically, and if it is not supported by reasoned judgment, it*  
26                   *should be accordingly modified.*  
27

28           Mr. Bauhan's paper is found in the Edison Electric Institute Publication No. 51-23, titled,  
29           "Methods of Estimating Utility Plant Life" published in 1952; the foregoing citations are  
30           found on Pages 61 and 63, titled respectively.  
31

1 The Retirement Experience Index (REI) is the percentage of the accumulated retirements  
2 with the given Iowa curve from the oldest capital addition, e.g., if the oldest addition was  
3 1930, by convention it would be 70.5 years old at year-end 2000. If the Iowa curve in  
4 question was a 35-year L 1.0, the REI would be 96; that is, the 35-year L 1.0 Iowa curve  
5 shows 4 percent surviving at age 70.5 years, and 100 percent less 4 percent equals 96  
6 percent.

7  
8 In summary, life estimates consider many factors, including the importance of informed  
9 judgment.

10  
11 **Q. Is the use of judgment an important part of any depreciation study?**

12 **A.** Yes, it is. The NARUC manual of Public Utility Depreciation Practices also presents a  
13 brief discussion at page 126 which includes the following:

14 *Informed judgment is a term used to define the subjective portion of the*  
15 *depreciation study process. It is based on a combination of general*  
16 *experience, knowledge of the properties and a physical inspection,*  
17 *information gathered throughout the industry, and other factors which*  
18 *assist the analyst in making a knowledgeable estimate....*

19  
20 *The analyst's role in performing the study is to review the results and*  
21 *determine if they represent the mortality characteristics of the property.*  
22 *Using judgment, the analyst considers such things as personal experience,*  
23 *maintenance policies, past company studies, and other company owned*  
24 *equipment to determine if the stub curve represents this class of property.*  
25

26 **Q. You state earlier that property inspections were made in connection with this study.**

27 **What was the purpose of the property inspections made of Chesapeake's facilities?**

28 **A.** The inspections were intended to accomplish several functions. First and foremost, the  
29 inspections verified that the assets identified on Chesapeake's books actually exist.

30 Second, the inspections verify that the assets continue to be maintained and are useable.

1 In addition, inspections facilitate discussion regarding the existing facilities with  
2 personnel who accompany us and provide us with a better understanding of the overall  
3 system, the equipment, and ongoing changes to their service territory.  
4

5 **Q. What technique did you use in developing your proposed accrual rates?**

6 A. The accrual rates were derived by using a well recognized and accepted technique known  
7 as average remaining life for each plant account as follows:

$$\text{Remaining Life Accrual Rate (ARL)} = \frac{100\% - \text{Net Salvage (NS)} - \text{Depreciation Reserve (DR)}}{\text{Average Remaining Life}}$$

8  
9 **Q. What factors influence the determination of the Average Remaining Life (ARL)**  
10 **technique?**

11 A. The ARL technique is a function of the average age of the assets, their average service  
12 life, and the Iowa curve selected as most appropriate in analyzing each account. A  
13 complete list showing the ASL and Iowa curve selected for each account is shown in  
14 Schedule A, columns 2 and 3, of the Depreciation Study, Schedule PMN-2. The report  
15 also discusses each account and the associated recommendations.  
16

17 **Q. What are the Net Salvage (NS) used in determining your proposed accrual rates?**

18 A. Net salvage (NS) is one of several factors used in the derivation of each of the proposed  
19 accrual rates presented in the Depreciation Study, Schedule PMN-2. Net salvage is the  
20 resulting difference between the gross salvage of an asset when it is disposed less its  
21 associated cost of removal from service.  
22

1 Our proposed NS factors have changed for some accounts from the Company's last study  
2 results as can be noted in the Depreciation Study, Schedule PMN-2, Section VII,  
3 Estimated Net Salvage.

4  
5 **Q. Is Net Salvage an important aspect to establishing reasonable and equitable**  
6 **depreciation accrual rates?**

7 A. Yes it is. Net salvage is an important cost that must be recovered in an equitable manner  
8 over the useful life of an asset from those customers who benefit from the use and service  
9 of an asset. To defer the proper recovery of these costs until much later at retirement will  
10 introduce a subsidy to existing customers by the recovery of these costs from only future  
11 customers who may in fact only use an asset for a very small portion of its life.

12  
13 **Q. What is the total Chesapeake composite annual accrual rate which results from**  
14 **your Depreciation Study?**

15 A. The composite results of the proposed straight line, remaining life technique for  
16 individual account accrual rates detailed in the Depreciation Study is 3.48%, as shown on  
17 Schedule A, column 10, of the report.

18  
19 **Q. Do the depreciation accrual rates you propose result in a higher depreciation**  
20 **expense than that derived using the existing authorized depreciation accrual rates?**

21 A. Using the same December 31, 2005 account balances, the proposed accrual rates result in  
22 a depreciation expense which is lower than currently being recognized. On Page 12 of  
23 the Depreciation Study and on Schedule B, the proposed annual depreciation accrual

1 expense rate for Chesapeake is 3.50% as compared to 4.11% using the existing accrual  
2 rates.

3  
4 **Q. Have you presented the net salvage (NS) impact in your depreciation study?**

5 A. The net salvage percent has been detailed for each account and subaccount in columns 4  
6 and 5 in Schedule A. In addition, a separate calculation has also been provided in column  
7 11 for identifying the cost of removal (COR) component contained in each proposed  
8 accrual rate shown in column 10. A derivation of the COR for each account has been  
9 provided in Appendix C of the depreciation report, Schedule PMN-2. The report also  
10 discusses net salvage at page 11 and COR at page 30.

11  
12 **IV. CONCLUSION**

13 **Q. Does this complete your testimony?**

14 A. Yes.

**Schedule PMN-1**

**Qualifications of  
Paul M. Normand**



**PAUL M. NORMAND**  
**Principal**

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Experience in the electric, gas, and water industry includes project management of various cost analyses, engineering system planning and design functions, and detailed electric power loss analyses. Also, experienced in the analysis and preparation of economic and plant data, revenue requirements and presentation before state and federal regulatory agencies. Presented expert testimony on behalf of utilities in over 30 applications before regulatory commissions.

**EXPERIENCE:**

**1984 - Present    MANAGEMENT APPLICATIONS CONSULTING, INC.**

Principal consultant providing consulting services to industry in planning, pricing, and regulation. Extensive experience in analyzing power systems for power loss studies and regulatory issues.

Assist in gathering and updating property accounting data for depreciation studies.

Review and analyze life analyses relating to simulated plant balances and actuarial data.

Perform property inspections to aid in service life estimation and salvage and removal cost estimations.

**1983 - 1984    P. M. NORMAND ASSOCIATES**

Independent consultant providing services to the utility industry in cost analyses, regulatory services and expert testimony.

**1976 - 1983    GILBERT/COMMONWEALTH, Reading, Pa.**

Director, Rate Regulatory Services - Administrative and fiscal responsibility for rate and regulatory services nationally for electric, gas, and water utilities.

Additional responsibilities included all marketing, research and development efforts, and contract negotiations for all studies performed by the Regulatory Service Department. Provided consulting service to utilities in project management, personnel staffing, and future development efforts.

Manager, Austin, Texas Office - Responsibility for the overall administrative and business aspects for the department in the Southwest.

Senior Management Consultant - Responsibilities included project management of various electric and gas cost-of-service studies.

PAUL M. NORMAND / Page 2  
(Continued)

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Consulting Engineer - Prepared class and time-differentiated cost-of-service studies, revenue requirements exhibits, and expert testimony for formal rate proceedings before regulatory agencies. Performed forecasted ten-year cost-of-service studies by customer classes. Analyzed and prepared transmission (wheeling) rates based on cost-of-service.

Engineer - Derived system demand and energy loss factors and customer load characteristics required for cost-of-service results and related rate schedules.

1975 - 1976     **WESTINGHOUSE ELECTRIC CORPORATION**, Pittsburgh, PA  
Responsible for the procurement of electrical/electronic control equipment and power cables for the nuclear reactor control system. Assisted in the development of procedures for the seismic testing of various electronic equipment related to reactor control.

1971 - 1974     **NEW ENGLAND ELECTRIC SYSTEM**, Westborough, Massachusetts  
Experience from various system assignments in conjunction with formal education. Assigned to the Transmission and Distribution Department with responsibilities in several voltage conversion efforts and system planning. Development of network modeling techniques, load flow, and fault study analyses for the system planning department.

1966 - 1970     **U.S. NAVY**  
Aviation electronic technician with responsibilities for maintenance and trouble-shooting of electronic communication equipment.

**EDUCATION:**

B.S.E.E., Electrical Engineering, Northeastern University, 1975  
M.S.E.E., Electrical Power Systems, Northeastern University, 1975

Graduate Studies - MBA Program, Lehigh University and Albright College,  
1977 to 1980

**SOCIETIES:**

Institute of Electrical and Electronic Engineers

**APPEARANCES AS EXPERT WITNESS:**

New Hampshire Public Utilities Commission  
Massachusetts Department of Public Utilities  
Federal Energy Regulatory Commission  
Maine Public Utilities Commission  
Public Utilities Commission of Texas  
Arkansas Public Service Commission  
Louisiana Public Service Commission  
Illinois Commerce Commission  
Kentucky Public Service Commission  
Missouri Public Service Commission  
New Jersey Board of Public Utilities  
New York Public Service Commission  
Pennsylvania Public Utility Commission  
Delaware Public Service Commission  
Maryland Public Service Commission  
Indiana Utility Regulatory Commission

**PAPERS AND PRESENTATIONS:**

"Probability of Dispatch Costing Method for Electric Utility Cost-of-Service Analysis." Co-authored with P. S. Hurley, presented to Edison Electric Institute Rate Research Committee May 4, 1982.

"Costing Strategies under Changing Marketing Goals and Long Term Investment Growth." Presented to Missouri Valley Electric Association (MVEA), Kansas City, MO, November 13, 1991.

**Schedule PMN-2**  
**Depreciation Rate Study**

**CHESAPEAKE UTILITIES CORPORATION**

**GAS DEPRECIATION RATE STUDY**

**FOR THE DELAWARE DIVISION SERVICE AREA**

**Depreciation Accrual Rates**  
**Based on Gas Plant in Service**  
**At December 31, 2005**



**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
Depreciation Accrual Rates Based on  
Gas Plant in Service at December 31, 2005**

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**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
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**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
Depreciation Accrual Rates Based on  
Gas Plant in Service at December 31, 2005**

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Stone & Webster Management Consultants Depreciation Report – 1990





**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
Depreciation Accrual Rates Based on  
Gas Plant in Service at December 31, 2005**

**LETTER OF TRANSMITTAL**





## MANAGEMENT APPLICATIONS CONSULTING, INC.

1103 Rocky Drive • Suite 201 • Reading, PA 19609-1157 • 610/670-9199 • fax 610/670-9190 • www.manapp.com

April 30, 2007

Ms. Jennifer A. Clausius  
Manager of Pricing and Regulation  
Chesapeake Utilities Corporation  
350 South Queen Street  
P. O. Box 1769  
Dover, DE 19903

Dear Ms. Clausius:

In accordance with the authorization of your organization, Management Applications Consulting, Inc. (MAC) has completed a depreciation rate study of the depreciable gas utility property of Chesapeake Utilities Corporation's Delaware Division plant in service as of December 31, 2005. The results of this study are presented in the attached report.

The study was accomplished by our organization, with your assistance and that of others within your organization. Our depreciation study develops accrual rates defined as straight line, broad group, remaining life using the family of Iowa curves.

We appreciate the opportunity to have been of service.

Respectfully,

MANAGEMENT APPLICATIONS CONSULTING, INC.

Paul M. Normand

Enclosures

PMN/rjp

**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
Depreciation Accrual Rates Based on  
Gas Plant in Service at December 31, 2005**

**I. FOREWORD**



**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
Depreciation Accrual Rates Based on  
Gas Plant in Service at December 31, 2005**

**I. FOREWORD**

This report presents the results of a detailed study of the relevant characteristics of the depreciable gas plant in service for the Chesapeake Utilities Corporation Delaware Division's service area. The recommendations regarding annual depreciation accrual calculations have been developed on plant in service at December 31, 2005 and are applicable until subsequent studies indicate the need for revision. In our opinion, based on our analyses, experience and judgment, the straight line, broad group, remaining life depreciation accrual rates developed herein will provide for the proper and timely recovery of capital invested in the depreciable gas properties of the Company's service area.



**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
Depreciation Accrual Rates Based on  
Gas Plant in Service at December 31, 2005**

**II. SUMMARY**



**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
Depreciation Accrual Rates Based on  
Gas Plant in Service at December 31, 2005**

## II. SUMMARY

### A. FINDINGS

Management Applications Consulting, Inc. (MAC) has completed a study of the service life characteristics of certain capital investments of Chesapeake Utilities Corporation Delaware Division's depreciable gas property as of December 31, 2005. The study develops average service lives, mortality characteristics, net salvage estimates, average remaining lives, average remaining life accrual rates and cost of removal rates for each depreciable investment group (subaccounts and accounts).

#### 1. Service Life

This study results in a difference in average service life between functions as shown below:

	<u>Total Company</u>	<u>Production</u>	<u>Distribution</u>	<u>General</u>
Total Depreciable Plant ASL	44.2	34.8	51.3	12.4

These ASLs are based on the use of the proposed average life estimates using plant in service at December 31, 2005. The account-by-account detail has been provided in the remaining life accrual rate schedule (Schedule A).

#### 2. Curve Types

The most commonly recognized curve type or frequency distribution is the "bell curve." Our depreciation study used a group of well recognized distributions known as Iowa curves which were developed in the 1920s and 1930s at Iowa State University and we believe are the most widely used and accepted curves in the industry for establishing survivor curves and average service lives.



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3. Net Salvage

The overall objective of depreciation is to recover the original cost investment less any salvage values plus the related removal cost according to the various Uniform Systems of Accounts. The accrual rates developed in this study reflect net salvage values based upon the most recent actual historical experience of the Company's Delaware Division service area, modified by our judgment and experience. Net salvage is the gross salvage less any costs to retire/remove assets.

<u>Plant Function</u>	Balance at 12/31/05 \$000	<u>- - - Proposed Accruals - - -</u>	
		<u>Rate (%)</u>	<u>(\$000)</u>
Production	3,232	3.02	97.6
Distribution	54,585	3.34	1,820.7
General	2,608	7.59	198.0
Total Depreciable Plant	60,425	3.50	2,116.3

In order to provide additional information with respect to the cost of removal ("COR") component included in the proposed Accrual Rates, Schedule A, in the net salvage of column (5), a separate calculation was undertaken to isolate the COR component. Those results are shown in column (11) of Schedule A. The actual calculations for the COR have been provided in Appendix C.

The following table summarizes our proposed depreciation results as presented on the attached depreciation Schedule A along with a comparison of the currently approved accrual rates:

<u>Account</u>	<u>Proposed Accrual Rate w/ Net Salvage (%)</u>	<u>Current Accrual Rate w/ Net Salvage (%)</u>
<u>Production Plant</u>		
304.10	F.D.	4.14
305	1.26	2.34
311	3.17	2.85
<u>Distribution Plant</u>		
376	2.71	3.62
378	3.77	2.72
379	3.46	2.78
380	4.82	5.47
381	2.29	2.06
382	3.28	5.77
383	1.77	2.59
385	4.14	3.15
387	3.92	3.75



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<u>General Plant</u>		
391	3.59	5.29
392	13.07	9.45
394	2.44	2.85
395	F.D.	1.75
396	4.95	5.01
397	F.D.	3.65
398	4.44	3.33

4. Magnitude of Depreciation Accrual Expense

The following table provides a comparison of the depreciation accrual expense developed by applying the effective existing and proposed accrual rates to the functional level rates of this study to the December 31, 2005 balances:

<u>Plant Function</u>	<u>Balance at 12/31/05 \$000</u>	- - - Composite - - -		<u>Estimated Accruals/w Proposed Rates (\$000)</u>	<u>Estimated Accruals/w Existing Rates (\$000)</u>
		<u>Proposed Accrual Rate, %</u>	<u>Existing Accrual Rate, %</u>		
Total					
Depreciable Plant	\$60,425	3.50	4.11	\$2,115	\$2,486

Note that these proposed results are taken from the attached Schedule B of this depreciation accrual study.

5. Proposed Accrual Rates

Our study developed two separate accrual rate schedules as follows:

Schedule A    Remaining Life Schedule for the Delaware Division Service Area  
                  – Column 10 of this schedule presents the proposed accrual rates.

Schedule B    Comparison of the Existing and Proposed Accrual Rates.





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**B. RECOMMENDATIONS**

Based on our results of analyzing the Company's depreciable property, we recommend the following:

1. Request approval of the accrual rates shown in column (10) of the accrual rate Schedule A included in this report.
2. Future reviews of these accrual rates should be undertaken on a periodic basis, typically every five to seven years.



**Chesapeake Utilities Corporation  
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**III. INTRODUCTION**



**Chesapeake Utilities Corporation  
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Gas Plant in Service at December 31, 2005**

**III. INTRODUCTION**

**A. STUDY AUTHORIZATION**

In the last quarter of 2006, Management Applications Consulting, Inc. (MAC), of Reading, Pennsylvania was authorized to conduct a depreciation rate study of Chesapeake Utilities Corporation Delaware Division service area gas utility properties.

The study included detailed analyses of the depreciable gas plant in service at December 31, 2005 for the purpose of recommending depreciation accrual rates reflective of current facts and projections. The techniques used were those generally recognized and accepted in the industry and included analyses of historical plant investment experience and of the Company's forecasts of expected capital, as well as reviews of recent available cost of removal (COR) and salvage experience.

**B. DEFINITION OF DEPRECIATION**

The overall objective of depreciation is to provide an orderly recovery of capital investment in depreciable property in a systematic and rational manner over a life term that assures full recovery of that investment. Regulatory accounting also provides for the amortization of any costs of removal expected to be incurred less anticipated salvage, i.e., net salvage, at the time the property is finally retired or removed from service by incorporating net salvage adjustments into the annual depreciation accrual rates. This approach ensures that these costs will be properly recovered in an equitable manner by those using the facilities over the useful service life of an asset.

There are several definitions of depreciation. The definitions promulgated by the Federal Energy Regulatory Commission (FERC) and the National Association of Regulatory Utility Commissioners (NARUC) are essentially identical. Following is the NARUC definition:

*"Depreciation", as applied to depreciable electric (gas) plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric (gas) plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities (and, in the case of natural gas companies, the exhaustion of natural resources).*



**Chesapeake Utilities Corporation  
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C. GENERAL APPROACH TO CONDUCTING DEPRECIATION STUDIES

The MAC depreciation study analyses are consistent with the generally accepted approaches employed in the industry to determine appropriate annual depreciation accrual rates. In addition to reviewing and analyzing historical accounting records, engineering judgment is used in assessing historical experience as a possible factor to consider into the future. To this end, MAC becomes familiar with the property and its operations via site inspections and discussions with appropriate management personnel as to past practices and experience, as well as future plans and expectations, which could have had or may yet affect mortality patterns, average service lives, cost of removal or salvage. These approaches to preparing a depreciation study are typical of industry practices and provide a solid foundation for determining life estimation.

D. DEPRECIATION MODEL

Our depreciation model for this study consisted of using a straight line, broad group, average remaining life depreciation method which uses the same accrual factor each year over the service life of the various plant accounts and subaccounts being analyzed. Due to the existence of very large quantities of assets, utility plant is generally grouped into broad groups of plant accounts and subaccounts in which the unit of measure is the original cost dollar, as opposed to individual property units.

Finally, depreciable plant must be recovered over a defined period of time, and our depreciation model used the remaining life technique for calculating the annual accrual rates proposed. These rates are derived by using an estimated service life and include the calculated net salvage for each plant account:

$$\text{Remaining Life Accrual Rate (ARL)} = \frac{100\% - \text{Net Salvage (NS)} - \text{Depreciation Reserve (DR)}}{\text{Average Remaining Life}}$$

Remaining life depreciation acts to minimize the accrual rate changes but still provides for the complete recovery of capital over the property's useful life—no more and no less. The account-by-account results are presented in the attached Schedule A of Depreciation in column 10 with the net salvage factored into the proposed accrual rates. A separate column 11 has been provided which identifies the cost of removal (COR) component included in the proposed accrual rates of column 10. Appendix C presents the derivation of these COR factors.



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**IV. DEVELOPMENT OF DEPRECIATION STUDY**



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#### **IV. DEVELOPMENT OF DEPRECIATION STUDY**

##### **A. DATABASE**

The starting point of our depreciation study is the development of a database which utilizes the Company's additions, retirements, adjustments, transfers and plant balances by depreciable account and subaccount. We reviewed each account history and developed a detailed data set from the Company's plant history.

Within the depreciation study database, we refer to each separately identified group of assets as a data set. This data set may include the plant investment history for one primary plant account or subaccount. The Company provided historical data for developing 21 semi-actuarial data sets.

Examples of this database have been provided in Appendix A for the two largest accounts consisting of Mains (Account 376) and Services (Accounts 380).

##### **B. ANALYSIS OF HISTORY**

The historical life analysis employed in this study was the Simulated Plant Record – Balances (SPR-BAL). The SPR-BAL analysis was introduced in 1947 by Mr. Alex Bauhan of Public Service Electric and Gas and is widely used and accepted in the industry.

The analyses are trial-and-error procedures in which the survivor statistics for various empirical (usually Iowa) curves are applied to the actual annual addition amounts to generate simulated year-end balances which are then compared to actual year-end balances. The best-fitting life is found for each curve type, and the curve-life combinations are ranked according to the sum of the squared differences between actual and simulated balances. In the procedure, there are three key statistical reliability indications developed for each curve-life combination. They are: the conformance index (CI), which is mathematically interrelated to the sum of the squared differences between the book and simulated balances; the retirement index (RI); and the cycle index. The retirement index is the percent retired from the oldest addition with the given indicated curve-life combination. The cycle index is the age of the oldest addition as a percent of the maximum probable life of the given curve-life combination. Maximum Probable Life (MPL) is the age at which the survivor curve drops to zero surviving. With a standard bell/symmetrical curve, the MPL is twice the average service life.



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Detailed information has been provided in Appendix B as well as the output from the SPR-BAL analyses of Mains and Services.

Life analyses of history, such as the SPR analyses, represent only part of the input that must be reviewed in arriving at the final recommended service life.

**C. SALVAGE, COST OF REMOVAL AND NET SALVAGE ANALYSIS**

The Company's historical recorded gross salvage and removal cost for the period 1991 to 2005 was collected and analyzed. The Company's actual recorded salvage and removal costs were related to the retirements to develop annual and dollar-weighted, multi-year composite net salvage percentage values.

Our analysis of the data shows very little gross salvage associated with Distribution Plant retirements, i.e., net salvage is primarily net removal cost.

Since the Company provided data for both gross salvage and cost of removal by account, the net salvage values were simply calculated as their difference:

$$\text{Net Salvage (NS)} = \text{Gross Salvage (GS)} - \text{Cost of Removal (COR)}$$

Recent experience has shown that the cost of removal has generally been far greater in magnitude than gross salvage resulting in a negative net salvage which can vary significantly by account.

The inclusion of net salvage in determining the annual accrual rate for each account is a well recognized and appropriate calculation. Recognizing the uniqueness of each account's COR history in arriving at the final accrual coupled with the corresponding plant balances properly synchronizes and weights the results. This approach ensures that the cost of net salvage is recovered from those generations of customers benefiting from the asset over its service life. Our proposed net salvage and cost of removal are shown in the attached Schedule A of this study.

The Company's historical net salvage is but one input considered, along with our experience and judgment, in arriving at our final net salvage factors.



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**V. DISCUSSION OF RESULTS**





**Chesapeake Utilities Corporation  
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**V. DISCUSSION OF RESULTS**

**A. APPLICATION OF COST RECOVERY**

In the recovery of capital by public utilities, there are two techniques most commonly employed to determine annual depreciation accruals, the whole life technique and the remaining life technique. The whole life technique involves the application of predetermined depreciation accrual rates (the reciprocal of the estimated average whole life) to the average gross investment in depreciable properties throughout their existence (that is, the life span of any survivors). The remaining life technique is a function of two variables, the net unrecovered plant investment (plant investment less book reserve less estimated net salvage) and the average remaining life, with the accrual equal to the unrecovered plant divided by the average remaining life. The average remaining life for an investment group is a function of the age distribution of the surviving investment, the average whole life of the group, and the mortality characteristic (curve type, a.k.a. retirement frequency distribution).

This study develops remaining life depreciation accrual rates that compensate for the inevitable depreciation reserve variances (difference between actual and theoretical reserves) which arise. The variances arise due to differences in the past and currently projected future; periodic studies such as this are necessary to minimize any variances.

Utility property is never static; it is always changing. The components, technology, life expectations, retirement characteristics, salvage receipts, and removal costs are seldom, if ever, constant. Consequently, the purpose of periodic depreciation studies is to detect the changes that have occurred since the last study, to measure the effect of these changes on the recovery of presently surviving capital and to properly revise, based upon current knowledge and expectations, the capital recovery rate(s). Most of the changes that occur are occasioned by the demands of current customers for more reliable equipment, better service, more economical operation, etc. These circumstances, compounded by diminishing gross salvage and increasing cost of removal, often result in cumulative variances between prior recoveries of capital and that which might have been recovered given the present outlook and prospective capital recovery rate. The course of action to be taken when such variances occur is to adopt accrual rates which will first arrest their growth, and second, if possible, dissolve the variances over a reasonable period of time.

There are only two points in the life of depreciable property at which we can be certain exactly what the depreciation reserve should be: 1) when new property is first placed in service, and the reserve is zero, and 2) when the property is finally retired and the costs of retirement are known, and the reserve should again be zero. Any reserve measurement between these two dates is approximate, but cannot be ignored since the primary goal is



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to charge capital expense to those who use the capital assets. Reserve measurement involves the computation of a theoretical depreciation reserve which is compared to the book reserve, i.e., the Accumulated Provision for Depreciation. Remaining life accrual rates, unlike whole life rates, compensate for the indicated reserve variance.

For mass properties (like mains and services), statistical mortality studies of past retirement experience may provide historical indication of the dispersion of retirements and of average service life, if there has been sufficient retirement activity over a reasonable period of time. Such indication can sometimes provide a guide as to what to expect in the future, but it should not be taken for granted that the future will mirror the past, especially when policies, plans, or external circumstances dictate otherwise. In such instances, as well as when reliable retirement experience is lacking, reliance must be placed upon informed judgment in the estimation of average service lives. A basic factor which must be considered in the selection of a reasonable mortality pattern (dispersion) is the probable total life span. The probable total life span is the age at retirement of the oldest survivors of each vintage installation (each year's additions). For example, an Iowa L 0.0 dispersion with a 20-year average life indicates that the longest lived elements of each vintage installation will be about 76 years old at retirement and will require a 5.00% basic whole life accrual rate on average investment balances over a 76-year total span. On the other hand, an S 0.0 dispersion with a 20-year average life indicates the longest lived elements of each vintage installation will be 40 years old at retirement, similarly requiring a 5.00% accrual rate, but which rate is expected to be applied to average balances over only a 40-year total span.

**B. AVERAGE SERVICE LIFE AND SURVIVOR CURVES**

Survivor curves are graphical representations of the surviving property for each age for the life of a group of assets, such as a plant account. The survivor curve selection from analyses of the Company's database for each account then establishes the average and remaining life for that group. These survivor curve characteristics are generally best reflected for utility property by the use of a well established system of generalized survivor curves known in the industry as Iowa curves. Each of these curves can be identified by two components in our study. For instance, for Account 381, Meters, our recommended curve is a 45-year ASL with an L 4.0. The 45 years represent the average service life estimate, and the other component is the shape of the curve. Finally, the number following the letter for each curve represents the height of each curve with the higher values representing a reduced range and maximum life.

A brief comment here is that an "R" designation indicates a skewness to later retirements while an "L" indicates skewness to an earlier retirement. For some accounts, we recommended an "S" type which represents a symmetrical curve with the greatest frequency of retirements occurring at the average service life.



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**VI. ACCOUNT-BY-ACCOUNT ANALYSIS AND  
RECOMMENDATIONS**



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**VI. ACCOUNT-BY-ACCOUNT ANALYSIS AND RECOMMENDATIONS**

Appendix D contains the depreciation accrual schedules from the Company's last study which is referenced in the discussion of each primary account:

**A. PRODUCTION PLANT**

Account 304.10 – Land Rights

A review of this account showed that it had a balance of \$1,451 but was fully depreciated (F.D.) as of 12/31/05.

Account 305.00 – Structures & Improvements

Our analysis of this account indicates that the existing ASL of 41 years should be longer in reviewing all bands. We recommend a change from the current 41-year ASL and an R 2.5 curve to a modest increase using a 48-year ASL and an R 2.0 curve with no change to the existing 0% NS from the last study.

Account 311.00 – LPG Equipment

A review of all bands and the top five curves from our analyses suggests that the current ASL of 34 years is reasonable, but the existing curve of R 4.0 should be changed to an S 5.0. We are therefore recommending a 34-year ASL with an S 5.0 curve with a change in the NS from +15% to a 0% value based on our analyses of the data.

**B. DISTRIBUTION PLANT**

Account 376.00 – Mains

This is the largest plant account in the Delaware Division with a value of \$28 M with the prior study analysis developing a 50-year ASL and R 1.0 curve. Our analysis of this account using several bands indicated that the ASL should be increased, and we are recommending a modest increase to a 60-year ASL with an S 1.0 curve. A review of the NS since 1991 in five-year bands indicated a slight decrease in the value, and we are recommending a change from a -75% to a -70% NS.



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Account 378.00 – Measuring and Regulating Station Equipment – General

This is a small plant account, but our analysis indicated that a small change was warranted, and we are recommending that the existing 31-year ASL R 4.0 curve be changed to a 29-year ASL and an L 2.0 curve. Our review of the Company's NS data indicates that the current +10% NS is not valid, and we are therefore recommending a 0% NS.

Account 379.00 – Measuring and Regulating Station Equipment – City Gate

Our review of this account indicates that the ASL should be increased, and we are recommending that the prior 26-year ASL S 0.0 curve be changed to a 29-year ASL with an L 2.0 curve. Our review of the NS data indicates that the +15% from the prior study cannot be supported, and we are therefore recommending a 0% NS.

Account 380.00 – Services

This is the second largest plant account with \$15.9 M and the prior analysis determining a 40-year ASL and an L 0.0 curve. Our analysis of all bands indicates a larger ASL, and we have recommended a rather large increase to a 50-year ASL and an S 0.5 curve. Our analysis of NS also indicates that the prior -120% needs to be changed, and we are recommending a -150% level.

Account 381 – Meters

Our analysis of this account indicates that the last ten years showed a considerable amount of activity with respect to additions and retirements with the prior 44-year ASL requiring a small change. We are recommending an increase in ASL to 45 years with a change to an L 4.0 curve. A review of the NS data indicates that the prior +10% level cannot be supported, and we are recommending using a 0% NS.

Account 382.00 – Meter Installations

A very large portion of the account balances were within the last ten years with some retirement activity. Our analysis of this account indicates that the prior 27-year ASL and S 1.0 curve should be increased, and we are recommending a modest 35-year ASL with an L 3.0 curve. The NS data indicate that the prior -55% should be changed, and we are recommending a -40% NS.



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Account 383.00 – House Regulators

Our life analyses at all bands are questionable, but we are recommending a consistent increase similar to meters and services with a change from the current 40-year ASL and R 4.0 curve to a modest increase to a 50-year ASL and R 2.0 curve. A review of the NS data indicates that the existing 0.0% be maintained.

Account 385.00 – Industrial M&R Station Equipment

Our review of the data indicates over 50% of the plant balance was added in the last ten years. Our analyses indicate that a change is required to the 22-year ASL S 1.5 curve, and we are recommending a 26-year ASL and an S 5.0 curve. The current +20% NS is not supported by the data, and we recommend a change to 0% be approved.

Account 387.00 – Other Equipment

Our analyses of all bands for this account indicate no changes are required, and we are recommending that the current 26-year ASL and S 6.0 curve be maintained. A review of the NS data also indicates that no change is required, so we are maintaining the same 0% NS level.

C. GENERAL PLANT

Account 391.00 – Office Furniture & Equipment

Our review of this account indicates that the prior 18-year ASL and L 3.0 curve should be maintained since our life analysis showed no retirements nor support for any change. A review of the Company's NS data indicates a change, and we are recommending that the prior NS of +10% be changed to a +5% level.

Account 392.00 – Transportation Equipment

The analyses of this account indicated that the prior nine-year ASL and R 5.0 curve need to be changed, and we are recommending an eight-year ASL and an R 1.0 curve with a reduction in the NS from the prior +15% to a lower +10% based on the data.

Account 394.00 – Tools, Shop & Garage Equipment

All of our analyses indicated an increase in ASL, and we are therefore recommending a modest change from the prior 32-year ASL and S 1.0 curve to a 37-year ASL and L 2.0 curve. A review of the NS data generally supports no change to the existing 0% NS which we are recommending.



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Account 395.00 – Laboratory Equipment

A review of this account showed that it had a balance of \$1,658 but was fully depreciated (F.D.) as of 12/31/05.

Account 396.00 – Power Operated Equipment

Our analysis of this account suggests that only a minor change be made, and we are recommending that the prior 14-year ASL R 4.0 curve be slightly increased to a 15-year ASL and S 5.0 curve. We also recommend that the existing 20% NS level be maintained.

Account 397.00 – Communication Equipment

A review of this account showed that it had a balance of \$3,832 but was fully depreciated (F.D.) as of 12/31/05.

Account 398.00 – Miscellaneous Equipment

Our review of this account indicates questionable results and no retirement history. We are therefore recommending a small change from the existing 27-year ASL R 4.0 curve to a 25-year ASL and SQ curve with no change to the existing 0% NS value. Most of this equipment has typically no salvage value.



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**VII. ESTIMATED NET SALVAGE**





**Chesapeake Utilities Corporation  
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**VII. ESTIMATED NET SALVAGE**

We have computed the primary plant account level gross salvage as a percentage of retirements, the same for the removal cost and the net salvage. As previously mentioned, net salvage is the gross salvage dollars less the removal cost.

The net salvage estimates for this study are considered to be conservative in that historically the costs to remove have increased more than the gross salvage, and our estimates are generally higher than the realized net salvage values. That is, it is unlikely that future costs to remove/retire property will decrease, especially since a major component of that cost is labor, and labor costs are likely to continue to increase.

The following table summarizes our proposed and the existing net salvage values for each plant account based on the last depreciation study of the Company:

	----- Net Salvage (%) -----	
	<u>Proposed<sup>1</sup></u>	<u>Prior Study<sup>2</sup></u>
<u>Production Plant</u>		
305.00	0	0
311.00	0	15
<u>Distribution Plant</u>		
376.00	-70	-75
378.00	0	10
379.00	0	15
380.00	-150	-120
381.00	0	10
382.00	-40	-55
383.00	0	0
385.00	0	20
387.00	0	0
<u>General Plant</u>		
391.00	5	10
392.00	10	15
394.00	0	0
395.00	0	0
396.00	20	20
397.00	0	0
398.00	0	0

Notes: Reference Schedules and Appendices for Data

1 – Schedule A

2 – Appendix D



DATED: June 21, 2007

STATE OF PENNSYLVANIA)  
COUNTY OF BERKS ) SS:

AFFIDAVIT OF PAUL M. NORMAND

PAUL M. NORMAND, being first duly sworn according to law, on oath deposes and says that he is the witness whose testimony appears as "Chesapeake Utilities Corporation, Delaware Division, Direct Testimony of Paul M. Normand;" that, if asked the questions which appear in the text of the direct testimony, he would give the answers that are therein set forth; and that he adopts this testimony as his sworn direct testimony in these proceedings.

  
Paul M. Normand

Then personally appeared this <sup>21ST</sup>~~22nd~~ day of June, 2007 the above-named Paul M. Normand and acknowledged the foregoing Testimony to be his free act and deed. Before me,

  
Notary Public  
My Commission Expires: 9-24-09

COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Tiffany A. Sholly, Notary Public  
Sinking Spring Boro, Berks County  
My Commission Expires Sept. 24, 2009  
Member, Pennsylvania Association of Notaries

**CHESAPEAKE UTILITIES CORPORATION**

**GAS DEPRECIATION RATE STUDY**

**FOR THE DELAWARE DIVISION SERVICE AREA**

**Depreciation Accrual Rates**  
**Based on Gas Plant in Service**  
**At December 31, 2005**



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**LETTER OF TRANSMITTAL**





## MANAGEMENT APPLICATIONS CONSULTING, INC.

1103 Rocky Drive • Suite 201 • Reading, PA 19609-1157 • 610/670-9199 • fax 610/670-9190 • www.manapp.com

April 30, 2007

Ms. Jennifer A. Clausius  
Manager of Pricing and Regulation  
Chesapeake Utilities Corporation  
350 South Queen Street  
P. O. Box 1769  
Dover, DE 19903

Dear Ms. Clausius:

In accordance with the authorization of your organization, Management Applications Consulting, Inc. (MAC) has completed a depreciation rate study of the depreciable gas utility property of Chesapeake Utilities Corporation's Delaware Division plant in service as of December 31, 2005. The results of this study are presented in the attached report.

The study was accomplished by our organization, with your assistance and that of others within your organization. Our depreciation study develops accrual rates defined as straight line, broad group, remaining life using the family of Iowa curves.

We appreciate the opportunity to have been of service.

Respectfully,

MANAGEMENT APPLICATIONS CONSULTING, INC.

Paul M. Normand

Enclosures

PMN/rjp



**Chesapeake Utilities Corporation  
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**I. FOREWORD**



**Chesapeake Utilities Corporation  
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**I. FOREWORD**

This report presents the results of a detailed study of the relevant characteristics of the depreciable gas plant in service for the Chesapeake Utilities Corporation Delaware Division's service area. The recommendations regarding annual depreciation accrual calculations have been developed on plant in service at December 31, 2005 and are applicable until subsequent studies indicate the need for revision. In our opinion, based on our analyses, experience and judgment, the straight line, broad group, remaining life depreciation accrual rates developed herein will provide for the proper and timely recovery of capital invested in the depreciable gas properties of the Company's service area.



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**II. SUMMARY**



**Chesapeake Utilities Corporation  
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## **II. SUMMARY**

### **A. FINDINGS**

Management Applications Consulting, Inc. (MAC) has completed a study of the service life characteristics of certain capital investments of Chesapeake Utilities Corporation Delaware Division's depreciable gas property as of December 31, 2005. The study develops average service lives, mortality characteristics, net salvage estimates, average remaining lives, average remaining life accrual rates and cost of removal rates for each depreciable investment group (subaccounts and accounts).

#### **1. Service Life**

This study results in a difference in average service life between functions as shown below:

	<u>Total Company</u>	<u>Production</u>	<u>Distribution</u>	<u>General</u>
Total Depreciable Plant ASL	44.2	34.8	51.3	12.4

These ASLs are based on the use of the proposed average life estimates using plant in service at December 31, 2005. The account-by-account detail has been provided in the remaining life accrual rate schedule (Schedule A).

#### **2. Curve Types**

The most commonly recognized curve type or frequency distribution is the "bell curve." Our depreciation study used a group of well recognized distributions known as Iowa curves which were developed in the 1920s and 1930s at Iowa State University and we believe are the most widely used and accepted curves in the industry for establishing survivor curves and average service lives.



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3. Net Salvage

The overall objective of depreciation is to recover the original cost investment less any salvage values plus the related removal cost according to the various Uniform Systems of Accounts. The accrual rates developed in this study reflect net salvage values based upon the most recent actual historical experience of the Company's Delaware Division service area, modified by our judgment and experience. Net salvage is the gross salvage less any costs to retire/remove assets.

<u>Plant Function</u>	<u>Balance at 12/31/05 \$000</u>	<u>- - - Proposed Accruals - - -</u>	
		<u>Rate (%)</u>	<u>(\$000)</u>
Production	3,232	3.02	97.6
Distribution	54,585	3.34	1,820.7
General	2,608	7.59	198.0
Total Depreciable Plant	60,425	3.50	2,116.3

In order to provide additional information with respect to the cost of removal ("COR") component included in the proposed Accrual Rates, Schedule A, in the net salvage of column (5), a separate calculation was undertaken to isolate the COR component. Those results are shown in column (11) of Schedule A. The actual calculations for the COR have been provided in Appendix C.

The following table summarizes our proposed depreciation results as presented on the attached depreciation Schedule A along with a comparison of the currently approved accrual rates:

<u>Account</u>	<u>Proposed Accrual Rate w/ Net Salvage (%)</u>	<u>Current Accrual Rate w/ Net Salvage (%)</u>
<u>Production Plant</u>		
304.10	F.D.	4.14
305	1.26	2.34
311	3.17	2.85
<u>Distribution Plant</u>		
376	2.71	3.62
378	3.77	2.72
379	3.46	2.78
380	4.82	5.47
381	2.29	2.06
382	3.28	5.77
383	1.77	2.59
385	4.14	3.15
387	3.92	3.75



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<u>General Plant</u>		
391	3.59	5.29
392	13.07	9.45
394	2.44	2.85
395	F.D.	1.75
396	4.95	5.01
397	F.D.	3.65
398	4.44	3.33

4. Magnitude of Depreciation Accrual Expense

The following table provides a comparison of the depreciation accrual expense developed by applying the effective existing and proposed accrual rates to the functional level rates of this study to the December 31, 2005 balances:

<u>Plant Function</u>	<u>Balance at 12/31/05 \$000</u>	<u>--- Composite ---</u>		<u>Estimated Accruals/w Proposed Rates (\$000)</u>	<u>Estimated Accruals/w Existing Rates (\$000)</u>
		<u>Proposed Accrual Rate, %</u>	<u>Existing Accrual Rate, %</u>		
Total					
Depreciable Plant	\$60,425	3.50	4.11	\$2,115	\$2,486

Note that these proposed results are taken from the attached Schedule B of this depreciation accrual study.

5. Proposed Accrual Rates

Our study developed two separate accrual rate schedules as follows:

Schedule A    Remaining Life Schedule for the Delaware Division Service Area  
                  – Column 10 of this schedule presents the proposed accrual rates.

Schedule B    Comparison of the Existing and Proposed Accrual Rates.



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**B. RECOMMENDATIONS**

Based on our results of analyzing the Company's depreciable property, we recommend the following:

1. Request approval of the accrual rates shown in column (10) of the accrual rate Schedule A included in this report.
2. Future reviews of these accrual rates should be undertaken on a periodic basis, typically every five to seven years.



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**III. INTRODUCTION**





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**III. INTRODUCTION**

**A. STUDY AUTHORIZATION**

In the last quarter of 2006, Management Applications Consulting, Inc. (MAC), of Reading, Pennsylvania was authorized to conduct a depreciation rate study of Chesapeake Utilities Corporation Delaware Division service area gas utility properties.

The study included detailed analyses of the depreciable gas plant in service at December 31, 2005 for the purpose of recommending depreciation accrual rates reflective of current facts and projections. The techniques used were those generally recognized and accepted in the industry and included analyses of historical plant investment experience and of the Company's forecasts of expected capital, as well as reviews of recent available cost of removal (COR) and salvage experience.

**B. DEFINITION OF DEPRECIATION**

The overall objective of depreciation is to provide an orderly recovery of capital investment in depreciable property in a systematic and rational manner over a life term that assures full recovery of that investment. Regulatory accounting also provides for the amortization of any costs of removal expected to be incurred less anticipated salvage, i.e., net salvage, at the time the property is finally retired or removed from service by incorporating net salvage adjustments into the annual depreciation accrual rates. This approach ensures that these costs will be properly recovered in an equitable manner by those using the facilities over the useful service life of an asset.

There are several definitions of depreciation. The definitions promulgated by the Federal Energy Regulatory Commission (FERC) and the National Association of Regulatory Utility Commissioners (NARUC) are essentially identical. Following is the NARUC definition:

*"Depreciation", as applied to depreciable electric (gas) plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric (gas) plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities (and, in the case of natural gas companies, the exhaustion of natural resources).*



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C. GENERAL APPROACH TO CONDUCTING DEPRECIATION STUDIES

The MAC depreciation study analyses are consistent with the generally accepted approaches employed in the industry to determine appropriate annual depreciation accrual rates. In addition to reviewing and analyzing historical accounting records, engineering judgment is used in assessing historical experience as a possible factor to consider into the future. To this end, MAC becomes familiar with the property and its operations via site inspections and discussions with appropriate management personnel as to past practices and experience, as well as future plans and expectations, which could have had or may yet affect mortality patterns, average service lives, cost of removal or salvage. These approaches to preparing a depreciation study are typical of industry practices and provide a solid foundation for determining life estimation.

D. DEPRECIATION MODEL

Our depreciation model for this study consisted of using a straight line, broad group, average remaining life depreciation method which uses the same accrual factor each year over the service life of the various plant accounts and subaccounts being analyzed. Due to the existence of very large quantities of assets, utility plant is generally grouped into broad groups of plant accounts and subaccounts in which the unit of measure is the original cost dollar, as opposed to individual property units.

Finally, depreciable plant must be recovered over a defined period of time, and our depreciation model used the remaining life technique for calculating the annual accrual rates proposed. These rates are derived by using an estimated service life and include the calculated net salvage for each plant account:

$$\text{Remaining Life Accrual Rate (ARL)} = \frac{100\% - \text{Net Salvage (NS)} - \text{Depreciation Reserve (DR)}}{\text{Average Remaining Life}}$$

Remaining life depreciation acts to minimize the accrual rate changes but still provides for the complete recovery of capital over the property's useful life—no more and no less. The account-by-account results are presented in the attached Schedule A of Depreciation in column 10 with the net salvage factored into the proposed accrual rates. A separate column 11 has been provided which identifies the cost of removal (COR) component included in the proposed accrual rates of column 10. Appendix C presents the derivation of these COR factors.



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**IV. DEVELOPMENT OF DEPRECIATION STUDY**



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**IV. DEVELOPMENT OF DEPRECIATION STUDY**

**A. DATABASE**

The starting point of our depreciation study is the development of a database which utilizes the Company's additions, retirements, adjustments, transfers and plant balances by depreciable account and subaccount. We reviewed each account history and developed a detailed data set from the Company's plant history.

Within the depreciation study database, we refer to each separately identified group of assets as a data set. This data set may include the plant investment history for one primary plant account or subaccount. The Company provided historical data for developing 21 semi-actuarial data sets.

Examples of this database have been provided in Appendix A for the two largest accounts consisting of Mains (Account 376) and Services (Accounts 380).

**B. ANALYSIS OF HISTORY**

The historical life analysis employed in this study was the Simulated Plant Record – Balances (SPR-BAL). The SPR-BAL analysis was introduced in 1947 by Mr. Alex Bauhan of Public Service Electric and Gas and is widely used and accepted in the industry.

The analyses are trial-and-error procedures in which the survivor statistics for various empirical (usually Iowa) curves are applied to the actual annual addition amounts to generate simulated year-end balances which are then compared to actual year-end balances. The best-fitting life is found for each curve type, and the curve-life combinations are ranked according to the sum of the squared differences between actual and simulated balances. In the procedure, there are three key statistical reliability indications developed for each curve-life combination. They are: the conformance index (CI), which is mathematically interrelated to the sum of the squared differences between the book and simulated balances; the retirement index (RI); and the cycle index. The retirement index is the percent retired from the oldest addition with the given indicated curve-life combination. The cycle index is the age of the oldest addition as a percent of the maximum probable life of the given curve-life combination. Maximum Probable Life (MPL) is the age at which the survivor curve drops to zero surviving. With a standard bell/symmetrical curve, the MPL is twice the average service life.



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Detailed information has been provided in Appendix B as well as the output from the SPR-BAL analyses of Mains and Services.

Life analyses of history, such as the SPR analyses, represent only part of the input that must be reviewed in arriving at the final recommended service life.

**C. SALVAGE, COST OF REMOVAL AND NET SALVAGE ANALYSIS**

The Company's historical recorded gross salvage and removal cost for the period 1991 to 2005 was collected and analyzed. The Company's actual recorded salvage and removal costs were related to the retirements to develop annual and dollar-weighted, multi-year composite net salvage percentage values.

Our analysis of the data shows very little gross salvage associated with Distribution Plant retirements, i.e., net salvage is primarily net removal cost.

Since the Company provided data for both gross salvage and cost of removal by account, the net salvage values were simply calculated as their difference:

$$\text{Net Salvage (NS)} = \text{Gross Salvage (GS)} - \text{Cost of Removal (COR)}$$

Recent experience has shown that the cost of removal has generally been far greater in magnitude than gross salvage resulting in a negative net salvage which can vary significantly by account.

The inclusion of net salvage in determining the annual accrual rate for each account is a well recognized and appropriate calculation. Recognizing the uniqueness of each account's COR history in arriving at the final accrual coupled with the corresponding plant balances properly synchronizes and weights the results. This approach ensures that the cost of net salvage is recovered from those generations of customers benefiting from the asset over its service life. Our proposed net salvage and cost of removal are shown in the attached Schedule A of this study.

The Company's historical net salvage is but one input considered, along with our experience and judgment, in arriving at our final net salvage factors.



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**V. DISCUSSION OF RESULTS**



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**V. DISCUSSION OF RESULTS**

**A. APPLICATION OF COST RECOVERY**

In the recovery of capital by public utilities, there are two techniques most commonly employed to determine annual depreciation accruals, the whole life technique and the remaining life technique. The whole life technique involves the application of predetermined depreciation accrual rates (the reciprocal of the estimated average whole life) to the average gross investment in depreciable properties throughout their existence (that is, the life span of any survivors). The remaining life technique is a function of two variables, the net unrecovered plant investment (plant investment less book reserve less estimated net salvage) and the average remaining life, with the accrual equal to the unrecovered plant divided by the average remaining life. The average remaining life for an investment group is a function of the age distribution of the surviving investment, the average whole life of the group, and the mortality characteristic (curve type, a.k.a. retirement frequency distribution).

This study develops remaining life depreciation accrual rates that compensate for the inevitable depreciation reserve variances (difference between actual and theoretical reserves) which arise. The variances arise due to differences in the past and currently projected future; periodic studies such as this are necessary to minimize any variances.

Utility property is never static; it is always changing. The components, technology, life expectations, retirement characteristics, salvage receipts, and removal costs are seldom, if ever, constant. Consequently, the purpose of periodic depreciation studies is to detect the changes that have occurred since the last study, to measure the effect of these changes on the recovery of presently surviving capital and to properly revise, based upon current knowledge and expectations, the capital recovery rate(s). Most of the changes that occur are occasioned by the demands of current customers for more reliable equipment, better service, more economical operation, etc. These circumstances, compounded by diminishing gross salvage and increasing cost of removal, often result in cumulative variances between prior recoveries of capital and that which might have been recovered given the present outlook and prospective capital recovery rate. The course of action to be taken when such variances occur is to adopt accrual rates which will first arrest their growth, and second, if possible, dissolve the variances over a reasonable period of time.

There are only two points in the life of depreciable property at which we can be certain exactly what the depreciation reserve should be: 1) when new property is first placed in service, and the reserve is zero, and 2) when the property is finally retired and the costs of retirement are known, and the reserve should again be zero. Any reserve measurement between these two dates is approximate, but cannot be ignored since the primary goal is



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to charge capital expense to those who use the capital assets. Reserve measurement involves the computation of a theoretical depreciation reserve which is compared to the book reserve, i.e., the Accumulated Provision for Depreciation. Remaining life accrual rates, unlike whole life rates, compensate for the indicated reserve variance.

For mass properties (like mains and services), statistical mortality studies of past retirement experience may provide historical indication of the dispersion of retirements and of average service life, if there has been sufficient retirement activity over a reasonable period of time. Such indication can sometimes provide a guide as to what to expect in the future, but it should not be taken for granted that the future will mirror the past, especially when policies, plans, or external circumstances dictate otherwise. In such instances, as well as when reliable retirement experience is lacking, reliance must be placed upon informed judgment in the estimation of average service lives. A basic factor which must be considered in the selection of a reasonable mortality pattern (dispersion) is the probable total life span. The probable total life span is the age at retirement of the oldest survivors of each vintage installation (each year's additions). For example, an Iowa L 0.0 dispersion with a 20-year average life indicates that the longest lived elements of each vintage installation will be about 76 years old at retirement and will require a 5.00% basic whole life accrual rate on average investment balances over a 76-year total span. On the other hand, an S 0.0 dispersion with a 20-year average life indicates the longest lived elements of each vintage installation will be 40 years old at retirement, similarly requiring a 5.00% accrual rate, but which rate is expected to be applied to average balances over only a 40-year total span.

**B. AVERAGE SERVICE LIFE AND SURVIVOR CURVES**

Survivor curves are graphical representations of the surviving property for each age for the life of a group of assets, such as a plant account. The survivor curve selection from analyses of the Company's database for each account then establishes the average and remaining life for that group. These survivor curve characteristics are generally best reflected for utility property by the use of a well established system of generalized survivor curves known in the industry as Iowa curves. Each of these curves can be identified by two components in our study. For instance, for Account 381, Meters, our recommended curve is a 45-year ASL with an L 4.0. The 45 years represent the average service life estimate, and the other component is the shape of the curve. Finally, the number following the letter for each curve represents the height of each curve with the higher values representing a reduced range and maximum life.

A brief comment here is that an "R" designation indicates a skewness to later retirements while an "L" indicates skewness to an earlier retirement. For some accounts, we recommended an "S" type which represents a symmetrical curve with the greatest frequency of retirements occurring at the average service life.





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**VI. ACCOUNT-BY-ACCOUNT ANALYSIS AND  
RECOMMENDATIONS**



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**VI. ACCOUNT-BY-ACCOUNT ANALYSIS AND RECOMMENDATIONS**

Appendix D contains the depreciation accrual schedules from the Company's last study which is referenced in the discussion of each primary account:

**A. PRODUCTION PLANT**

Account 304.10 – Land Rights

A review of this account showed that it had a balance of \$1,451 but was fully depreciated (F.D.) as of 12/31/05.

Account 305.00 – Structures & Improvements

Our analysis of this account indicates that the existing ASL of 41 years should be longer in reviewing all bands. We recommend a change from the current 41-year ASL and an R 2.5 curve to a modest increase using a 48-year ASL and an R 2.0 curve with no change to the existing 0% NS from the last study.

Account 311.00 – LPG Equipment

A review of all bands and the top five curves from our analyses suggests that the current ASL of 34 years is reasonable, but the existing curve of R 4.0 should be changed to an S 5.0. We are therefore recommending a 34-year ASL with an S 5.0 curve with a change in the NS from +15% to a 0% value based on our analyses of the data.

**B. DISTRIBUTION PLANT**

Account 376.00 – Mains

This is the largest plant account in the Delaware Division with a value of \$28 M with the prior study analysis developing a 50-year ASL and R 1.0 curve. Our analysis of this account using several bands indicated that the ASL should be increased, and we are recommending a modest increase to a 60-year ASL with an S 1.0 curve. A review of the NS since 1991 in five-year bands indicated a slight decrease in the value, and we are recommending a change from a -75% to a -70% NS.



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Account 378.00 – Measuring and Regulating Station Equipment – General

This is a small plant account, but our analysis indicated that a small change was warranted, and we are recommending that the existing 31-year ASL R 4.0 curve be changed to a 29-year ASL and an L 2.0 curve. Our review of the Company's NS data indicates that the current +10% NS is not valid, and we are therefore recommending a 0% NS.

Account 379.00 – Measuring and Regulating Station Equipment – City Gate

Our review of this account indicates that the ASL should be increased, and we are recommending that the prior 26-year ASL S 0.0 curve be changed to a 29-year ASL with an L 2.0 curve. Our review of the NS data indicates that the +15% from the prior study cannot be supported, and we are therefore recommending a 0% NS.

Account 380.00 – Services

This is the second largest plant account with \$15.9 M and the prior analysis determining a 40-year ASL and an L 0.0 curve. Our analysis of all bands indicates a larger ASL, and we have recommended a rather large increase to a 50-year ASL and an S 0.5 curve. Our analysis of NS also indicates that the prior -120% needs to be changed, and we are recommending a -150% level.

Account 381 – Meters

Our analysis of this account indicates that the last ten years showed a considerable amount of activity with respect to additions and retirements with the prior 44-year ASL requiring a small change. We are recommending an increase in ASL to 45 years with a change to an L 4.0 curve. A review of the NS data indicates that the prior +10% level cannot be supported, and we are recommending using a 0% NS.

Account 382.00 – Meter Installations

A very large portion of the account balances were within the last ten years with some retirement activity. Our analysis of this account indicates that the prior 27-year ASL and S 1.0 curve should be increased, and we are recommending a modest 35-year ASL with an L 3.0 curve. The NS data indicate that the prior -55% should be changed, and we are recommending a -40% NS.



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Account 383.00 – House Regulators

Our life analyses at all bands are questionable, but we are recommending a consistent increase similar to meters and services with a change from the current 40-year ASL and R 4.0 curve to a modest increase to a 50-year ASL and R 2.0 curve. A review of the NS data indicates that the existing 0.0% be maintained.

Account 385.00 – Industrial M&R Station Equipment

Our review of the data indicates over 50% of the plant balance was added in the last ten years. Our analyses indicate that a change is required to the 22-year ASL S 1.5 curve, and we are recommending a 26-year ASL and an S 5.0 curve. The current +20% NS is not supported by the data, and we recommend a change to 0% be approved.

Account 387.00 – Other Equipment

Our analyses of all bands for this account indicate no changes are required, and we are recommending that the current 26-year ASL and S 6.0 curve be maintained. A review of the NS data also indicates that no change is required, so we are maintaining the same 0% NS level.

C. GENERAL PLANT

Account 391.00 – Office Furniture & Equipment

Our review of this account indicates that the prior 18-year ASL and L 3.0 curve should be maintained since our life analysis showed no retirements nor support for any change. A review of the Company's NS data indicates a change, and we are recommending that the prior NS of +10% be changed to a +5% level.

Account 392.00 – Transportation Equipment

The analyses of this account indicated that the prior nine-year ASL and R 5.0 curve need to be changed, and we are recommending an eight-year ASL and an R 1.0 curve with a reduction in the NS from the prior +15% to a lower +10% based on the data.

Account 394.00 – Tools, Shop & Garage Equipment

All of our analyses indicated an increase in ASL, and we are therefore recommending a modest change from the prior 32-year ASL and S 1.0 curve to a 37-year ASL and L 2.0 curve. A review of the NS data generally supports no change to the existing 0% NS which we are recommending.



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Account 395.00 – Laboratory Equipment

A review of this account showed that it had a balance of \$1,658 but was fully depreciated (F.D.) as of 12/31/05.

Account 396.00 – Power Operated Equipment

Our analysis of this account suggests that only a minor change be made, and we are recommending that the prior 14-year ASL R 4.0 curve be slightly increased to a 15-year ASL and S 5.0 curve. We also recommend that the existing 20% NS level be maintained.

Account 397.00 – Communication Equipment

A review of this account showed that it had a balance of \$3,832 but was fully depreciated (F.D.) as of 12/31/05.

Account 398.00 – Miscellaneous Equipment

Our review of this account indicates questionable results and no retirement history. We are therefore recommending a small change from the existing 27-year ASL R 4.0 curve to a 25-year ASL and SQ curve with no change to the existing 0% NS value. Most of this equipment has typically no salvage value.



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**VII. ESTIMATED NET SALVAGE**



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Gas Plant in Service at December 31, 2005**

**VII. ESTIMATED NET SALVAGE**

We have computed the primary plant account level gross salvage as a percentage of retirements, the same for the removal cost and the net salvage. As previously mentioned, net salvage is the gross salvage dollars less the removal cost.

The net salvage estimates for this study are considered to be conservative in that historically the costs to remove have increased more than the gross salvage, and our estimates are generally higher than the realized net salvage values. That is, it is unlikely that future costs to remove/retire property will decrease, especially since a major component of that cost is labor, and labor costs are likely to continue to increase.

The following table summarizes our proposed and the existing net salvage values for each plant account based on the last depreciation study of the Company:

	----- Net Salvage (%) -----	
	<u>Proposed<sup>1</sup></u>	<u>Prior Study<sup>2</sup></u>
<u>Production Plant</u>		
305.00	0	0
311.00	0	15
<u>Distribution Plant</u>		
376.00	-70	-75
378.00	0	10
379.00	0	15
380.00	-150	-120
381.00	0	10
382.00	-40	-55
383.00	0	0
385.00	0	20
387.00	0	0
<u>General Plant</u>		
391.00	5	10
392.00	10	15
394.00	0	0
395.00	0	0
396.00	20	20
397.00	0	0
398.00	0	0

Notes: Reference Schedules and Appendices for Data

1 - Schedule A

2 - Appendix D



**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
Depreciation Accrual Rates Based on  
Gas Plant in Service at December 31, 2005**

**VIII. SCHEDULES**





**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
Depreciation Accrual Rates Based on  
Gas Plant in Service at December 31, 2005**

**Schedule A**

**Depreciation of Accrual Rates, Remaining Life Schedule**



CHESAPEAKE UTILITIES CORPORATION-DELAWARE DIVISION  
DEPRECIATION STUDY AS OF 12/31/05  
SCHEDULE OF INDICATED REMAINING LIFE ACCRUAL RATES

SCHEDULE A

ACCOUNT NUMBER	DESCRIPTION	PLANT BALANCE @12/31/05	DISP TYPE	ASL	EST PCT	NET SALVAGE AMOUNT	12/31/2005 DEPRECIATION BOOK RESERVE	BALANCE TO BE RECOVERED	EST REM LIFE	ANN DEP AMOUNT	ACCRUAL RATE	COR RATE
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>PRODUCTION PLANT</b>												
304.10	LAND RIGHTS	1,451	SQ	50.0	0	0	1,451	FULLY DEPRECIATED				N/A
305.00	STRUCTURES & IMPROVEMENTS	252,661	R 2.0	48.0	0	0	164,779	87,882	27.5	3,196	1.26	0.00%
311.00	LPG EQUIPMENT	2,977,522	S 5.0	34.0	0	0	853,629	2,123,893	22.5	94,395	3.17	0.00%
	<b>TOTAL DEPREC. PRODUCTION PLANT</b>	3,231,634		34.8		0	1,019,859	2,211,775		97,591	3.02	
<b>DISTRIBUTION PLANT</b>												
376.00	MAINS	27,985,387	S 1.0	60.0	-70	-19,589,771	9,073,684	38,501,474	50.7	759,398	2.71	1.17%
378.00	M & R STATION EQUIPMENT-GENERAL	167,231	L 2.0	29.0	0	0	40,491	126,740	20.1	6,305	3.77	0.00%
379.00	M & R STATION EQUIPMENT-CITY GATE	775,077	L 2.0	29.0	0	0	233,571	541,506	20.2	26,807	3.46	0.00%
380.00	SERVICES	15,905,341	S 0.5	50.0	-150	-23,858,012	7,309,368	32,453,985	42.3	767,234	4.82	3.00%
381.00	METERS	4,740,675	L 4.0	45.0	0	0	1,001,876	3,738,799	34.4	108,686	2.29	0.00%
382.00	METER INSTALLATIONS	2,678,696	L 3.0	35.0	-40	-1,071,478	1,385,175	2,364,999	26.9	87,918	3.28	1.14%
383.00	HOUSE REGULATORS	1,341,283	R 2.0	50.0	0	0	361,181	980,102	41.3	23,731	1.77	0.00%
385.00	INDUSTRIAL M & R STATION EQUIPMENT	803,973	S 5.0	26.0	0	0	248,629	555,344	16.7	33,254	4.14	0.00%
387.00	OTHER EQUIPMENT	187,149	S 6.0	26.0	0	0	74,943	112,206	15.3	7,334	3.92	0.00%
	<b>TOTAL DEPREC. DISTR. PLANT</b>	54,584,812		51.3		-44,519,261	19,728,918	79,375,155		1,820,667	3.34	
<b>GENERAL PLANT</b>												
391.00	OFFICE FURNITURE AND EQUIPMENT	492,147	L 3.0	18.0	5	24,607	246,976	220,564	12.5	17,645	3.59	0.00%
392.00	TRANSPORTATION EQUIPMENT	1,034,346	R 1.0	8.0	10	103,435	268,424	662,487	4.9	135,201	13.07	0.00%
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT	264,251	L 2.0	37.0	0	0	96,906	167,345	26.0	6,436	2.44	0.00%
395.00	LABORATORY EQUIPMENT	1,658	S 4.0	32.0	0	0	1,658	FULLY DEPRECIATED				N/A
396.00	POWER OPERATED EQUIPMENT	522,741	S 5.0	15.0	20	104,548	188,091	230,102	8.9	25,854	4.95	0.00%
397.00	COMMUNICATION EQUIPMENT	3,832	R 2.0	22.0	0	0	3,832	FULLY DEPRECIATED				N/A
398.00	MISCELLANEOUS EQUIPMENT	289,236	SQ	25.0	0	0	100,307	188,929	14.7	12,852	4.44	0.00%
	<b>TOTAL DEPREC. GENERAL PLANT</b>	2,608,211		12.4		232,590	906,194	1,469,427		197,988	7.59	
	<b>TOTAL DEPREC. GAS PLANT</b>	60,424,657		44.2		-44,286,671	21,654,971	83,056,357		2,116,246	3.50	
301.00	ORGANIZATION	6,732										
302.00	FRANCHISES AND CONSENTS	410										
303.00	MISCELLANEOUS INTANGIBLE PLANT	1,249,760					859,644					
304.00	LAND	139,111					2,627					
304.10	LAND RIGHTS EXCESS RESERVE	0					70,502					
390.00	STRUCTURES AND IMPROVEMENTS	63,020					-58,338					
397.00	COMM. EQUIPMENT (EXCESS RESERVE)	475					475					
399.00	OTHER TANGIBLE PROPERTY	61,884,165					22,529,881					
	<b>TOTAL GAS PLANT</b>											

**Chesapeake Utilities Corporation  
Delaware Division Gas Service Area  
Depreciation Accrual Rates Based on  
Gas Plant in Service at December 31, 2005**

**Schedule B**

**Comparison of Existing and Proposed Accrual Rates**



**CHESAPEAKE UTILITIES CORPORATION-DELAWARE DIVISION**  
**COMPARISON OF DEPRECIATION ACCRUAL RATES @12/31/05**

**SCHEDULE B**

ACCOUNT NUMBER	DESCRIPTION	PLANT BALANCE @12/31/05	CURRENT DEPREC. ACCRUAL RATES	CURRENT ANNUAL DEPREC. ACCRUAL	PROPOSED		DIFFERENCE	
					REMAINING LIFE DEPREC ACCRUAL RATES	REMAINING LIFE ANNUAL DEPREC. ACCRUAL	BETWEEN CURRENT AND PROPOSED REM LIFE ANNUAL ACCRUAL	(Col. 3-Col. 5)
		(1)	(2)	(3)	(4)	(5)	(6)	
<b><u>PRODUCTION PLANT</u></b>								
304.10	LAND RIGHTS	1,451	N/A	N/A	N/A	N/A	N/A	N/A
305.00	STRUCTURES AND IMPROVEMENTS	252,661	0.0234	5,912	0.0126	3,184	2729	2729
311.00	LPG EQUIPMENT	2,977,522	0.0285	84,859	0.0317	94,387	-9528	-9528
	<b><u>TOTAL PRODUCTION PLANT</u></b>	3,231,634	0.0281	90,772	0.0302	97,571	-6,799	-6,799
<b><u>DISTRIBUTION PLANT</u></b>								
376.00	MAINS	27,985,387	0.0362	1,013,071	0.0271	758,404	254,667	254,667
378.00	M & R STATION EQUIPMENT-GENERAL	167,231	0.0272	4,549	0.0377	6,305	-1756	-1756
379.00	M & R STATION EQUIPMENT-CITY GATE	775,077	0.0278	21,547	0.0346	26,818	-5,271	-5,271
380.00	SERVICES	15,905,341	0.0547	870,022	0.0482	766,637	103,385	103,385
381.00	METERS	4,740,675	0.0206	97,658	0.0229	108,561	-10,904	-10,904
382.00	METER INSTALLATIONS	2,678,696	0.0577	154,561	0.0328	87,861	66,700	66,700
383.00	HOUSE REGULATORS	1,341,283	0.0259	34,739	0.0177	23,741	10,999	10,999
385.00	IND. MEAS. & REG. STATION EQUIPMENT	803,973	0.0315	25,325	0.0414	33,284	-7,959	-7,959
387.00	OTHER EQUIPMENT	187,149	0.0375	7,018	0.0392	7,336	-318	-318
	<b><u>TOTAL DEPREC. DISTRIBUTION PLANT</u></b>	54,584,812	0.0408	2,228,490	0.0333	1,818,948	409,542	409,542
<b><u>GENERAL PLANT</u></b>								
391.00	OFFICE FURNITURE & EQUIPMENT	492,147	0.0529	26,035	0.0359	17,668	8,366	8,366
392.00	TRANSPORTATION EQUIPMENT	1,034,346	0.0945	97,746	0.1307	135,189	-37,443	-37,443
394.00	TOOLS, SHOP & GARAGE EQUIPMENT	264,251	0.0285	7,531	0.0244	6,448	1,083	1,083
395.00	LABORATORY EQUIPMENT	1,658	N/A	N/A	N/A	N/A	N/A	N/A
396.00	POWER OPERATED EQUIPMENT	522,741	0.0501	26,189	0.0495	25,876	314	314
397.00	COMMUNICATION EQUIPMENT	3,832	N/A	N/A	N/A	N/A	N/A	N/A
398.00	MISCELLANEOUS EQUIPMENT	289,236	0.0333	9,632	0.0444	12,842	-3,211	-3,211
	<b><u>TOTAL DEPREC. GENERAL PLANT</u></b>	2,608,211	0.0641	167,132	0.0759	198,023	-30,890	-30,890
	<b><u>TOTAL DEPREC. GAS PLANT</u></b>	60,424,657	0.0411	2,486,394	0.0350	2,114,541	371,853	371,853

**Appendix A**

**Summary of Database**

MANAGEMENT RESOURCES INTERNATIONAL, INC.  
 CHESAPEAKE UTILITIES CORP-DELAWARE DIV.  
 SUMMARY OF DATA BASE COMPANY FILE NO. 170 TYPE S

PAGE NO. 1  
 CO. NO. 1  
 DATE 02/09/07

ACCT. NO.	ACCOUNT NAME	LOC. NO.	LOCATION NAME	SURVIVING BALANCE	AS OF	LAST MAINT
304.10	PROD. LAND RIGHTS	1	TOTAL ACCOUNT	1451.00	12/31/2005	02/09/07
304.10	TOTAL SUBACCOUNT (NONMEMO)			1451.00*		
304	TOTAL ACCOUNT (NONMEMO)			1451.00**		
305.00	PROD STRUCTURES & IMPROV.	1	TOTAL ACCOUNT	252660.96	12/31/2005	02/09/07
305.00	TOTAL SUBACCOUNT (NONMEMO)			252660.96*		
305	TOTAL ACCOUNT (NONMEMO)			252660.96**		
311.00	PROD LPG EQUIPMENT	1	TOTAL ACCOUNT	2977521.87	12/31/2005	02/09/07
311.00	TOTAL SUBACCOUNT (NONMEMO)			2977521.87*		
311	TOTAL ACCOUNT (NONMEMO)			2977521.87**		
376.00	DISTR. MAINS	1	TOTAL ACCOUNT	27985386.94	12/31/2005	02/09/07
376.00	TOTAL SUBACCOUNT (NONMEMO)			27985386.94*		
376	TOTAL ACCOUNT (NONMEMO)			27985386.94**		
378.00	DIST M & R STATION EQUIP-GNL	1	TOTAL ACCOUNT	167230.56	12/31/2005	02/09/07
378.00	TOTAL SUBACCOUNT (NONMEMO)			167230.56*		
378	TOTAL ACCOUNT (NONMEMO)			167230.56**		
379.00	DISTR M&R STATION EQUIP-CITY	1	TOTAL ACCOUNT	775077.03	12/31/2005	02/09/07
379.00	TOTAL SUBACCOUNT (NONMEMO)			775077.03*		
379	TOTAL ACCOUNT (NONMEMO)			775077.03**		
380.00	DISTR SERVICES	1	TOTAL ACCOUNT	15905341.08	12/31/2005	02/09/07
380.00	TOTAL SUBACCOUNT (NONMEMO)			15905341.08*		
380	TOTAL ACCOUNT (NONMEMO)			15905341.08**		
381.00	DISTR METERS	1	TOTAL ACCOUNT	4740675.32	12/31/2005	02/09/07
381.00	TOTAL SUBACCOUNT (NONMEMO)			4740675.32*		
381	TOTAL ACCOUNT (NONMEMO)			4740675.32**		
382.00	DISTR METER INSTALLATIONS	1	TOTAL ACCOUNT	2678696.13	12/31/2005	02/09/07
382.00	TOTAL SUBACCOUNT (NONMEMO)			2678696.13*		
382	TOTAL ACCOUNT (NONMEMO)			2678696.13**		
383.00	DISTR HOUSE REGULATORS	1	TOTAL ACCOUNT	1341283.15	12/31/2005	02/09/07
383.00	TOTAL SUBACCOUNT (NONMEMO)			1341283.15*		
383	TOTAL ACCOUNT (NONMEMO)			1341283.15**		
385.00	DISTR IND M&R STATION EQUIP.	1	TOTAL ACCOUNT	803972.81	12/31/2005	02/09/07
385.00	TOTAL SUBACCOUNT (NONMEMO)			803972.81*		
385	TOTAL ACCOUNT (NONMEMO)			803972.81**		
387.00	DISTR OTHER EQUIPMENT	1	TOTAL ACCOUNT	187148.53	12/31/2005	02/09/07
387.00	TOTAL SUBACCOUNT (NONMEMO)			187148.53*		
387	TOTAL ACCOUNT (NONMEMO)			187148.53**		
390.00	GNL STURCTURES & IMRPOV.	1	TOTAL ACCOUNT	63019.59	12/31/2005	02/09/07
390.00	TOTAL SUBACCOUNT (NONMEMO)			63019.59*		

MANAGEMENT RESOURCES INTERNATIONAL, INC.  
 CHESAPEAKE UTILITIES CORP-DELAWARE DIV.  
 SUMMARY OF DATA BASE COMPANY FILE NO. 170 TYPE S

PAGE NO. 2  
 CO. NO. 1  
 DATE 02/09/07

ACCT. NO.	ACCOUNT NAME	LOC. NO.	LOCATION NAME	SURVIVING BALANCE	AS OF	LAST MAINT
390	TOTAL ACCOUNT (NONMEMO)			63019.59**		
391.00	GNL OFFICE FURN & EQUIP.	1	TOTAL ACCOUNT	492147.09	12/31/2005	02/09/07
391.00	TOTAL SUBACCOUNT (NONMEMO)			492147.09*		
391	TOTAL ACCOUNT (NONMEMO)			492147.09**		
392.00	GNL TRANSPORTATION EQUIP.	1	TOTAL ACCOUNT	1034346.16	12/31/2005	02/09/07
392.00	TOTAL SUBACCOUNT (NONMEMO)			1034346.16*		
392	TOTAL ACCOUNT (NONMEMO)			1034346.16**		
394.00	GNL TOOLS, SHOP & GARAGE EQUIP	1	TOTAL ACCOUNT	264250.88	12/31/2005	02/09/07
394.00	TOTAL SUBACCOUNT (NONMEMO)			264250.88*		
394	TOTAL ACCOUNT (NONMEMO)			264250.88**		
395.00	GNL LABORATORY EQUIPMENT	1	TOTAL ACCOUNT	1658.00	12/31/2005	02/09/07
395.00	TOTAL SUBACCOUNT (NONMEMO)			1658.00*		
395	TOTAL ACCOUNT (NONMEMO)			1658.00**		
396.00	GNL LABORATORY EQUIPMENT	1	TOTAL ACCOUNT	522740.60	12/31/2005	02/09/07
396.00	TOTAL SUBACCOUNT (NONMEMO)			522740.60*		
396	TOTAL ACCOUNT (NONMEMO)			522740.60**		
397.00	GNL COMMUNICATGION EQUIP.	1	TOTAL ACCOUNT	3831.68	12/31/2005	02/09/07
397.00	TOTAL SUBACCOUNT (NONMEMO)			3831.68*		
397	TOTAL ACCOUNT (NONMEMO)			3831.68**		
398.00	GNL MISC. EQUIPMENT	1	TOTAL ACCOUNT	289235.63	12/31/2005	02/09/07
398.00	TOTAL SUBACCOUNT (NONMEMO)			289235.63*		
398	TOTAL ACCOUNT (NONMEMO)			289235.63**		
399.00	GNL OTHER TANGIBLE PROPERTY	1	TOTAL ACCOUNT	475.00	12/31/2005	02/09/07
399.00	TOTAL SUBACCOUNT (NONMEMO)			475.00*		
399	TOTAL ACCOUNT (NONMEMO)			475.00**		
TOTALS - 21 UPDATE DATA SETS				60488150.01***		
- 0 MEMO DATA SETS				.00***		
- 21 ALL DATA SETS				60488150.01****		

## **Appendix B**

### **Samples of Depreciation Program Outputs**



## **Appendix B.1.**

### **Semi-Actuarial Databases**

**Appendix B.1.a.**

**Account 376 Mains**

1 376.00	1 DISTR. MAINS	TOTAL ACCOUNT				1 S1
1 376.00	1 02/09/07 1 DOLLARS GAS	2005	2798538694	1954	1954S2	
1 376.00	112005 354878733 1552500	0	0	0	2798538694 S3	
1 376.00	112004 200095897 059750	0	0	0	2445212461 S3	
1 376.00	112003 159697267 2122526	0	0	0	2245176314 S3	
1 376.00	112002 118170878 2753880	0	0	0	20876 1573 S3	
1 376.00	112001 93899750 1281272	0	0	0	1972184575 S3	
1 376.00	112000 74898729 12 2768	0	0	0	1879566097 S3	
1 376.00	111999 143645932 147075	0	0	0	1805870136 S3	
1 376.00	111998 2345 2138 3614862	0	0	0	1662371279 S3	
1 376.00	111997 1331 4200 0 2300	0	0	0	1431484003 S3	
1 376.00	111996 193570653 5 8950	0	0	0	1298382103 S3	
1 376.00	111995 2124 6500 1755300	0	0	0	1105320400 S3	
1 376.00	111994 118369100 861900	0	0	0	894669200 S3	
1 376.00	111993 90189700 3762000	0	0	0	777162000 S3	
1 376.00	111992 60494600 2948900	0	0	0	690734300 S3	
1 376.00	111991 39546900 1048800	0	0	0	633188600 S3	
1 376.00	111990 51474700 2747400	0	0	0	594690500 S3	
1 376.00	111989 60114400 733400	0	0	0	545963200 S3	
1 376.00	111988 45613800 1399600	0	0	0	486582200 S3	
1 376.00	111987 516 1100 757800	0	0	0	442368000 S3	
1 376.00	111986 28971200 9 9700	0	0	0	391524700 S3	
1 376.00	111985 32445800 352000	0	0	0	363463200 S3	
1 376.00	111984 21451200 462700	0	0	0	331369400 S3	
1 376.00	111983 18614000 294400	0	0	0	310380900 S3	
1 376.00	111982 107 400 1840500	0	0	0	292061300 S3	
1 376.00	111981 23384900 1381800	0	0	0	2832 1400 S3	
1 376.00	111980 172 3600 1324900	0	0	0	261198300 S3	
1 376.00	111979 20646100 1060000	0	0	0	245319600 S3	
1 376.00	111978 10820300 920700	0	0	0	225733500 S3	
1 376.00	111977 7321700 1093300	0	0	0	215833900 S3	
1 376.00	111976 11026700 1327700	0	0	0	2096 5500 S3	
1 376.00	111975 9396800 2839700	0	0	0	1999 6500 S3	
1 376.00	111974 20716500 4169200	0	0	0	193349400 S3	
1 376.00	111973 0 0 0 0	0	0	0	1768 2100 S3	
1 376.00	111972 8710200 768900	0	0	0	1768 2100 S3	
1 376.00	111971 8378200 1899900	0	0	0	168860800 S3	
1 376.00	111970 10358800 2795100	0	0	0	162382500 S3	
1 376.00	111969 13775100 13 6400	0	0	0	154818800 S3	
1 376.00	111968 17388400 477500	0	0	0	142350100 S3	
1 376.00	111967 16327800 850100	0	0	0	125439200 S3	
1 376.00	111966 11546100 161600	0	0	0	109961500 S3	
1 376.00	111965 17038200 182900	0	0	0	98577000 S3	
1 376.00	111964 167 1200 1243000	0	0	0	81721700 S3	
1 376.00	111963 12277500 977300	0	0	0	66263500 S3	
1 376.00	111962 5077600 872500	0	0	0	54963300 S3	
1 376.00	111961 6290400 6 7900	0	0	0	50758200 S3	
1 376.00	111960 5153600 324200	0	0	0	45075700 S3	
1 376.00	111959 6399800 637200	0	0	0	40246300 S3	
1 376.00	111958 2617500 190500	0	0	0	34483700 S3	
1 376.00	111957 2451800 666900	0	0	0	32056700 S3	
1 376.00	111956 22 5400 130900	0	0	0	30271800 S3	
1 376.00	111955 3287900 0 500	0	0	0	28197300 S3	
1 376.00	111954 249 9900 0 0	0	0	0	249 9900 S3	
1 376.00	11				S3	

**Appendix B.1.b.**  
**Account 380 Services**

1 380.00	1 DISTR SERVICES			TOTAL ACCOUNT				1 S1
1 380.00	1 02/09/07 1 DOLLARS GAS			2005 1590534108 1954 1954S2				
1 380.00	112005 176834719	771485	0	0	0	0	1590534108	S3
1 380.00	112004 181739437	4076551	0	0	0	0	1414470874	S3
1 380.00	112003 109169162	374289	0	0	0	0	12368 7988	S3
1 380.00	112002 111728451	212312	0	0	0	0	1128013115	S3
1 380.00	112001 99832607	475572	0	0	0	0	1016496976	S3
1 380.00	112000 92541959	0 0	0	0	0	0	917139941	S3
1 380.00	111999 76134760	454449	0	0	0	0	824597982	S3
1 380.00	111998 54427526	855735	0	0	0	0	748917671	S3
1 380.00	111997 65693300	685500	0	0	0	0	695345880	S3
1 380.00	111996 56625987	624107	0	0	0	0	630338080	S3
1 380.00	111995 49723900	20 600	0	0	0	0	574336200	S3
1 380.00	111994 42373500	1545200	0	0	0	0	526612900	S3
1 380.00	111993 42638800	830600	0	0	0	0	485784600	S3
1 380.00	111992 42940100	1526600	0	0	0	0	443976400	S3
1 380.00	111991 36889400	1872700	0	0	0	0	402562900	S3
1 380.00	111990 38551200	1052200	0	0	0	0	367546200	S3
1 380.00	111989 33732700	1349300	0	0	0	0	330047200	S3
1 380.00	111988 37872600	1275700	0	0	0	0	297663800	S3
1 380.00	111987 287 7800	1136000	0	0	0	0	261066900	S3
1 380.00	111986 311 4700	14 1300	0	0	0	0	233495100	S3
1 380.00	111985 23327100	1045100	0	0	0	0	203791700	S3
1 380.00	111984 15128300	1043100	0	0	0	0	1815 9700	S3
1 380.00	111983 13796100	1911500	0	0	0	0	167424500	S3
1 380.00	111982 19996900	1766000	0	0	0	0	155539900	S3
1 380.00	111981 15824600	1978800	0	0	0	0	1373 9000	S3
1 380.00	111980 13224600	1477200	0	0	0	0	123463200	S3
1 380.00	111979 11849600	896300	0	0	0	0	111715800	S3
1 380.00	111978 6781800	1120100	0	0	0	0	100762500	S3
1 380.00	111977 3262100	1353200	0	0	0	0	951 800	S3
1 380.00	111976 3929900	1485300	0	0	0	0	93191900	S3
1 380.00	111975 3839600	1640300	0	0	0	0	90747300	S3
1 380.00	111974 2573200	2216900	0	0	0	0	88548000	S3
1 380.00	111973 4664200	1757200	0	0	0	0	88191700	S3
1 380.00	111972 4567100	1292400	0	0	0	0	85284700	S3
1 380.00	111971 6969300	1233000	0	0	0	0	82010000	S3
1 380.00	111970 5855800	628900	0	0	0	0	76273700	S3
1 380.00	111969 9091600	1279000	0	0	0	0	71046800	S3
1 380.00	111968 8537500	739000	0	0	0	0	63234200	S3
1 380.00	111967 9169700	538900	0	0	0	0	55435700	S3
1 380.00	111966 6934500	467600	0	0	0	0	468 4900	S3
1 380.00	111965 6186700	554200	0	0	0	0	40338000	S3
1 380.00	111964 6450300	749100	0	0	0	0	347 5500	S3
1 380.00	111963 4254400	264300	0	0	0	0	290 4300	S3
1 380.00	111962 4742500	453400	0	0	0	0	25014200	S3
1 380.00	111961 3222900	931800	0	0	0	0	20725100	S3
1 380.00	111960 2234800	486900	0	0	0	0	18434000	S3
1 380.00	111959 2551200	141000	0	0	0	0	16686100	S3
1 380.00	111958 1744900	262600	0	0	0	0	14275900	S3
1 380.00	111957 1317200	242100	0	0	0	0	12793600	S3
1 380.00	111956 11 3600	1 300	0	0	0	0	11718500	S3
1 380.00	111955 1346900	078300	0	0	0	0	10715200	S3
1 380.00	111954 9446600	0 0	0	0	0	0	9446600	S3
1 380.00	11							S3

## **Appendix B.2.**

### **BAL Analysis**

**Appendix B.2.a.**

**Account 376 Mains**

MANAGEMENT RESOURCES INTERNATIONAL, INC. SPR BALANCES PROGRAM  
 CHESAPEAKE UTILITIES CORP-DELAWARE DIV.  
 PROPERTY CLASSIFICATION - GAS  
 ACCOUNT 376.00 DISTR. MAINS  
 NO. OF BALANCES 40 BAL. INTERVAL 1

02/12/07 PAGE 1

CO. NO. 1  
 DATA IN DOLLARS AS OF 12/31/2005  
 LOCATION 1 TOTAL ACCOUNT  
 ADDS/SURV TO 1954

TYPE	SUBTYPE	LIFE	CINDEX	RINDEX	SIGMA	RANK	CYCLE INDEX
L	0.0	117.99	54.55	21.304	.783547769E+12	1.	11.486
L	0.5	94.32	53.65	24.865	.809922157E+12	7.	14.599
L	1.0	74.71	52.09	32.245	.859239694E+12	10.	22.751
L	1.5	64.18	50.48	38.681	.914884065E+12	12.	26.747
L	2.0	55.52	47.39	49.181	.103789827E+13	16.	34.103
L	3.0	47.59	42.09	65.295	.131574671E+13	19.	46.646
L	4.0	43.36	37.65	80.706	.164437679E+13	22.	58.221
L	5.0	41.63	34.07	91.739	.200842262E+13	24.	67.973
SC		173.40	54.50	14.850	.785018764E+12	2.	14.850
S	.5	116.16	54.28	18.269	.791295861E+12	4.	22.167
S	0.0	77.22	53.80	27.494	.805374816E+12	6.	33.348
S	0.5	65.47	52.40	33.244	.849041072E+12	9.	39.330
S	1.0	55.87	50.28	42.926	.921997002E+12	13.	46.321
S	1.5	51.35	47.83	50.311	.101898240E+13	15.	50.400
S	2.0	47.47	44.78	60.031	.116272416E+13	18.	55.640
S	3.0	43.89	39.71	75.279	.147846994E+13	20.	63.423
S	4.0	41.89	35.11	90.432	.189162332E+13	23.	74.068
S	5.0	40.88	32.54	98.696	.220186014E+13	26.	85.124
S	6.0	40.35	31.43	99.992	.235987940E+13	27.	96.702
R	0.5	136.12	54.41	15.588	.787552160E+12	3.	18.823
R	1.0	102.06	54.17	17.542	.794359795E+12	5.	25.105
R	1.5	79.80	53.50	21.081	.814441210E+12	8.	32.109
R	2.0	62.38	51.72	29.951	.871384634E+12	11.	44.628
R	2.5	53.79	49.31	40.537	.958894650E+12	14.	51.756
R	3.0	47.41	45.50	58.266	.112590683E+13	17.	64.662
R	4.0	42.87	39.10	84.531	.152503315E+13	21.	79.558
R	5.0	41.12	33.71	98.471	.205174343E+13	25.	91.409

RANGE OF LIVES

FREQUENCY

0-9	0
10-19	0
20-29	0
30-39	0
40-49	11
50-59	4
60-69	3
70-79	2
GREATER THAN 80	7

OMEAN VALUE OF BEST FITTING LIVES IS 68.84 YEARS



MANAGEMENT RESOURCES INTERNATIONAL, INC. SPR BALANCES PROGRAM  
 CHESAPEAKE UTILITIES CORP-DELAWARE DIV.  
 PROPERTY CLASSIFICATION - GAS  
 ACCOUNT 376.00 DISTR. MAINS  
 NO. OF BALANCES 30 BAL. INTERVAL 1

02/12/07 PAGE 2

CO. NO. 1  
 DATA IN DOLLARS AS OF 12/31/2005  
 LOCATION 1 TOTAL ACCOUNT  
 ADDS/SURV TO 1954

TYPE	SUBTYPE	LIFE	CINDEX	RINDEX	SIGMA	RANK	CYCLE INDEX
L	0.0	118.60	63.38	21.165	.694339361E+12	1.	11.427
L	0.5	94.74	62.43	24.703	.715621565E+12	7.	14.535
L	1.0	74.94	60.93	32.088	.751287368E+12	10.	22.681
L	1.5	64.33	59.12	38.518	.797896885E+12	13.	26.684
L	2.0	55.60	55.58	49.050	.903051233E+12	16.	34.052
L	3.0	47.62	49.01	65.226	.116102009E+13	19.	46.616
L	4.0	43.37	43.44	80.689	.147800499E+13	22.	58.213
L	5.0	41.63	38.95	91.738	.183895236E+13	24.	67.972
SC		174.74	62.77	14.737	.707823601E+12	3.	14.737
S	-.5	116.88	62.75	18.129	.708374903E+12	4.	22.031
S	0.0	77.52	62.88	27.328	.705323223E+12	2.	33.218
S	0.5	65.67	61.39	33.065	.740134769E+12	9.	39.211
S	1.0	55.98	59.20	42.755	.795772850E+12	12.	46.226
S	1.5	51.42	56.18	50.158	.883761391E+12	15.	50.327
S	2.0	47.51	52.48	59.918	.101268439E+13	18.	55.590
S	3.0	43.91	46.06	75.235	.131472892E+13	20.	63.404
S	4.0	41.89	40.24	90.428	.172246320E+13	23.	74.066
S	5.0	40.88	37.05	98.695	.203235966E+13	26.	85.124
S	6.0	40.35	35.68	99.992	.219037724E+13	27.	96.702
R	0.5	137.12	62.71	15.465	.709224566E+12	5.	18.685
R	1.0	102.72	62.54	17.396	.713084756E+12	6.	24.944
R	1.5	80.21	61.88	20.902	.728426308E+12	8.	31.945
R	2.0	62.57	60.05	29.745	.773403365E+12	11.	44.489
R	2.5	53.90	57.34	40.316	.848414370E+12	14.	51.652
R	3.0	47.46	52.97	58.097	.994050921E+12	17.	64.597
R	4.0	42.88	45.18	84.488	.136663822E+13	21.	79.538
R	5.0	41.13	38.49	98.470	.188243610E+13	25.	91.406

RANGE OF LIVES	FREQUENCY
0-9	0
10-19	0
20-29	0
30-39	0
40-49	11
50-59	4
60-69	3
70-79	2
GREATER THAN 80	7

OMEAN VALUE OF BEST FITTING LIVES IS 69.09 YEARS

MANAGEMENT RESOURCES INTERNATIONAL, INC. SPR BALANCES PROGRAM  
 CHESAPEAKE UTILITIES CORP-DELAWARE DIV.  
 PROPERTY CLASSIFICATION - GAS  
 ACCOUNT 376.00 DISTR. MAINS  
 NO. OF BALANCES 20 BAL. INTERVAL 1

02/12/07 PAGE 3

CO. NO. 1  
 DATA IN DOLLARS AS OF 12/31/2005  
 LOCATION 1 TOTAL ACCOUNT  
 ADDS/SURV TO 1954

TYPE	SUBTYPE	LIFE	CINDEX	RINDEX	SIGMA	RANK	CYCLE INDEX
L	0.0	122.22	93.08	20.369	.395762817E+12	2.	11.089
L	0.5	97.39	92.37	23.702	.401923280E+12	4.	14.139
L	1.0	76.49	92.30	31.052	.402537786E+12	5.	22.221
L	1.5	65.43	90.18	37.346	.421645393E+12	12.	26.237
L	2.0	56.34	85.84	47.899	.465418629E+12	15.	33.605
L	3.0	48.02	74.71	64.317	.614433908E+12	19.	46.230
L	4.0	43.55	64.12	80.216	.834118347E+12	22.	57.964
L	5.0	41.71	55.38	91.577	.111814113E+13	24.	67.839
SC		181.91	90.34	14.156	.420134247E+12	10.	14.156
S	-.5	120.90	91.17	17.382	.412525796E+12	7.	21.298
S	0.0	79.31	94.08	26.376	.387449925E+12	1.	32.466
S	0.5	66.98	92.97	31.922	.396702883E+12	3.	38.447
S	1.0	56.87	91.97	41.473	.405389397E+12	6.	45.506
S	1.5	52.09	87.17	48.821	.451266115E+12	14.	49.686
S	2.0	48.01	81.74	58.611	.513303946E+12	17.	55.014
S	3.0	44.19	69.59	74.275	.708162124E+12	20.	62.997
S	4.0	42.00	58.01	90.091	.101902799E+13	23.	73.870
S	5.0	40.92	51.64	98.651	.128596814E+13	26.	85.034
S	6.0	40.35	48.90	99.992	.143431550E+13	27.	96.682
R	0.5	142.52	90.42	14.834	.419436133E+12	9.	17.977
R	1.0	106.33	90.60	16.643	.417800555E+12	8.	24.097
R	1.5	82.56	90.19	19.930	.421532362E+12	11.	31.035
R	2.0	63.83	88.77	28.472	.435218728E+12	13.	43.614
R	2.5	54.68	85.43	38.756	.469839878E+12	16.	50.912
R	3.0	47.89	79.53	56.565	.542101544E+12	18.	64.006
R	4.0	43.13	66.51	83.435	.775234024E+12	21.	79.075
R	5.0	41.21	54.29	98.374	.116348332E+13	25.	91.227

RANGE OF LIVES

FREQUENCY

0-9	0
10-19	0
20-29	0
30-39	0
40-49	11
50-59	4
60-69	3
70-79	2
GREATER THAN 80	7

MEAN VALUE OF BEST FITTING LIVES IS 70.62 YEARS

CHESAPEAKE UTILITIES CORP-DELAWARE DIV.

CO. NO. 1

PROPERTY CLASSIFICATION - GAS

DATA IN DOLLARS AS OF 12/31/2005

ACCOUNT 376.00 DISTR. MAINS

LOCATION 1 TOTAL ACCOUNT

NO. OF BALANCES 10 BAL. INTERVAL 1

ADDS/SURV TO 1954

TYPE	SUBTYPE	LIFE	CINDEX	RINDEX	SIGMA	RANK	CYCLE INDEX
L	0.0	132.37	191.35	18.381	.105201511E+12	8.	10.238
L	0.5	104.71	191.72	21.233	.104793950E+12	7.	13.151
L	1.0	81.20	196.16	28.147	.100109259E+12	2.	20.931
L	1.5	68.91	193.52	33.866	.102857479E+12	4.	24.911
L	2.0	58.88	189.54	44.075	.107219658E+12	14.	32.155
L	3.0	49.79	170.68	60.202	.132228535E+12	19.	44.582
L	4.0	44.95	147.06	76.441	.178118100E+12	22.	56.160
L	5.0	42.82	125.65	89.228	.243978032E+12	24.	66.089
SC		202.95	190.20	12.688	.106475828E+12	12.7	12.688
S	.5	132.71	190.93	15.482	.105660310E+12	9.	19.403
S	0.0	84.71	193.46	23.801	.102918580E+12	5.	30.396
S	0.5	70.85	194.38	28.839	.101945292E+12	3.	36.344
S	1.0	59.58	198.68	37.823	.975830102E+11	1.	43.436
S	1.5	54.34	192.38	44.523	.104082382E+12	6.	47.622
S	2.0	49.90	186.93	53.822	.110240380E+12	16.	52.930
S	3.0	45.69	161.06	69.122	.148496266E+12	20.	60.924
S	4.0	43.15	130.77	86.326	.225237668E+12	23.	71.891
S	5.0	41.99	113.98	97.282	.296491323E+12	26.	82.866
S	6.0	41.39	111.95	99.954	.307343041E+12	27.	94.262
R	0.5	158.45	190.32	13.239	.106344135E+12	11.	16.170
R	1.0	117.16	190.58	14.730	.106052956E+12	10.	21.869
R	1.5	89.86	190.14	17.392	.106540321E+12	13.	28.514
R	2.0	68.23	188.50	24.634	.108408040E+12	15.	40.803
R	2.5	57.45	183.48	33.866	.114419757E+12	17.7	48.458
R	3.0	49.80	173.52	50.281	.127927366E+12	18.	61.554
R	4.0	44.41	147.61	77.745	.176781072E+12	21.	76.797
R	5.0	42.22	120.39	96.718	.265752668E+12	25.	89.036

## RANGE OF LIVES

## FREQUENCY

0-9	0
10-19	0
20-29	0
30-39	0
40-49	8
50-59	6
60-69	3
70-79	1

GREATER THAN 80

9

MEAN VALUE OF BEST FITTING LIVES IS 75.50 YEARS

**Appendix B.2.b.**

**Account 380 Services**

MANAGEMENT RESOURCES INTERNATIONAL, INC. SPR BALANCES PROGRAM  
 CHESAPEAKE UTILITIES CORP-DELAWARE DIV.  
 PROPERTY CLASSIFICATION - GAS  
 ACCOUNT 380.00 DISTR SERVICES  
 NO. OF BALANCES 40 BAL. INTERVAL 1

02/14/07 PAGE 1

CO. NO. 1  
 DATA IN DOLLARS AS OF 12/31/2005  
 LOCATION 1 TOTAL ACCOUNT  
 ADDS/SURV TO 1954

TYPE	SUBTYPE	LIFE	CINDEX	RINDEX	SIGMA	RANK	CYCLE INDEX
L	0.0	82.06	29.51	33.201	.757300207E+12	4.	16.515
L	0.5	67.99	29.04	39.209	.782353617E+12	6.	20.254
L	1.0	56.38	28.42	48.438	.816567540E+12	9.	30.146
L	1.5	49.84	27.63	57.550	.863723071E+12	12.	34.446
L	2.0	44.31	26.73	68.271	.923499404E+12	14.	42.729
L	3.0	38.86	24.95	83.215	.105933010E+13	19.	57.127
L	4.0	35.98	23.14	95.107	.123218413E+13	21.	70.165
L	5.0	34.83	21.64	99.323	.140816294E+13	24.	81.253
SC		106.95	30.00	24.076	.732791408E+12	1.	24.076
S	-.5	77.21	29.60	30.422	.752900251E+12	3.	33.349
S	0.0	57.10	28.84	43.193	.792771442E+12	8.	45.092
S	0.5	50.07	28.16	52.282	.831755746E+12	10.	51.424
S	1.0	44.35	27.29	64.401	.885412375E+12	13.	58.349
S	1.5	41.42	26.44	74.133	.943421735E+12	16.	62.478
S	2.0	38.81	25.55	84.223	.101050822E+13	17.	68.042
S	3.0	36.28	23.94	95.750	.115041581E+13	20.	76.735
S	4.0	34.91	22.20	99.801	.133876403E+13	23.	88.864
S	5.0	34.31	20.85	100.000	.151733928E+13	26.	100.000 *
S	6.0	34.08	19.93	100.000	.166021716E+13	27.	100.000 *
R	0.5	85.65	29.86	26.097	.739575740E+12	2.	29.916
R	1.0	67.30	29.50	31.201	.757753661E+12	5.	38.071
R	1.5	55.72	28.85	40.092	.792642813E+12	7.	45.987
R	2.0	46.93	27.70	56.329	.859821919E+12	11.	59.323
R	2.5	42.38	26.45	73.193	.942754667E+12	15.	65.690
R	3.0	38.89	25.03	89.309	.105288807E+13	18.	78.826
R	4.0	35.94	23.08	99.810	.123784731E+13	22.	94.901
R	5.0	34.67	21.31	100.000	.145193979E+13	25.	100.000 *

RANGE OF LIVES

FREQUENCY

0-9	0
10-19	0
20-29	0
30-39	11
40-49	5
50-59	5
60-69	2
70-79	1
GREATER THAN 80	3

OMEAN VALUE OF BEST FITTING LIVES IS 50.86 YEARS

MANAGEMENT RESOURCES INTERNATIONAL, INC. SPR BALANCES PROGRAM  
 CHESAPEAKE UTILITIES CORP-DELAWARE DIV.  
 PROPERTY CLASSIFICATION - GAS  
 ACCOUNT 380.00 DISTR SERVICES  
 NO. OF BALANCES 30 BAL. INTERVAL 1

02/14/07 PAGE 2

CO. NO. 1  
 DATA IN DOLLARS AS OF 12/31/2005  
 LOCATION 1 TOTAL ACCOUNT  
 ADDS/SURV TO 1954

TYPE	SUBTYPE	LIFE	CINDEX	RINDEX	SIGMA	RANK	CYCLE INDEX
L	0.0	82.39	33.75	33.048	.702723144E+12	4.	16.450
L	0.5	68.22	33.25	39.035	.724121924E+12	6.	20.184
L	1.0	56.53	32.65	48.271	.750990696E+12	9.	30.066
L	1.5	49.94	31.77	57.399	.792959535E+12	11.	34.377
L	2.0	44.38	30.80	68.154	.843910967E+12	14.	42.666
L	3.0	38.89	28.74	83.159	.969077778E+12	18.	57.082
L	4.0	35.99	26.55	95.087	.113503199E+13	21.	70.136
L	5.0	34.83	24.74	99.321	.130759090E+13	24.	81.242
SC		107.57	34.17	23.939	.685416938E+12	1.	23.939
S	-.5	77.56	33.78	30.252	.701323619E+12	3.	33.200
S	0.0	57.28	33.07	43.006	.731759765E+12	7.	44.957
S	0.5	50.19	32.34	52.085	.765468110E+12	10.	51.301
S	1.0	44.43	31.42	64.222	.810575032E+12	13.	58.245
S	1.5	41.48	30.44	73.981	.863509896E+12	15.	62.391
S	2.0	38.85	29.44	84.115	.923347638E+12	17.	67.972
S	3.0	36.30	27.54	95.716	.105515815E+13	20.	76.692
S	4.0	34.92	25.42	99.799	.123872017E+13	23.	88.848
S	5.0	34.31	23.77	100.000	.141642050E+13	26.	100.000 *
S	6.0	34.08	22.66	100.000	.155926777E+13	27.	100.000 *
R	0.5	86.23	34.03	25.895	.691108683E+12	2.	29.715
R	1.0	67.59	33.65	30.999	.706656225E+12	5.	37.905
R	1.5	55.90	32.94	39.845	.737463671E+12	8.	45.837
R	2.0	47.02	31.69	56.086	.796820859E+12	12.	59.202
R	2.5	42.43	30.29	72.999	.872415698E+12	16.	65.602
R	3.0	38.92	28.69	89.205	.972151449E+12	19.	78.755
R	4.0	35.95	26.45	99.805	.114423493E+13	22.	94.858
R	5.0	34.67	24.34	100.000	.135153621E+13	25.	100.000 *

RANGE OF LIVES

FREQUENCY

0-9	0
10-19	0
20-29	0
30-39	11
40-49	5
50-59	5
60-69	2
70-79	1
GREATER THAN 80	3

OMEAN VALUE OF BEST FITTING LIVES IS 51.00 YEARS

MANAGEMENT RESOURCES INTERNATIONAL, INC. SPR BALANCES PROGRAM  
 CHESAPEAKE UTILITIES CORP-DELAWARE DIV.  
 PROPERTY CLASSIFICATION - GAS  
 ACCOUNT 380.00 DISTR SERVICES  
 NO. OF BALANCES 20 BAL. INTERVAL 1

02/14/07 PAGE 3

CO. NO. 1  
 DATA IN DOLLARS AS OF 12/31/2005  
 LOCATION 1 TOTAL ACCOUNT  
 ADDS/SURV TO 1954

TYPE	SUBTYPE	LIFE	CINDEX	RINDEX	SIGMA	RANK	CYCLE INDEX
L	0.0	84.89	47.32	31.905	.445489409E+12	4.	15.964
L	0.5	69.98	46.81	37.766	.455323594E+12	6.	19.678
L	1.0	57.78	46.38	46.896	.463789397E+12	8.	29.418
L	1.5	50.86	45.29	55.993	.486369561E+12	11.	33.752
L	2.0	45.09	44.38	66.868	.506504400E+12	14.	41.987
L	3.0	39.38	41.75	82.253	.572444908E+12	18.	56.368
L	4.0	36.36	38.42	94.583	.675882594E+12	21.	69.438
L	5.0	35.11	35.44	99.204	.794477890E+12	24.	80.590
SC		111.79	47.74	23.035	.437807484E+12	1.	23.035
S	-.5	80.06	47.33	29.078	.445409388E+12	3.	32.162
S	0.0	58.72	46.60	41.480	.459502774E+12	7.	43.848
S	0.5	51.18	45.79	50.506	.475881299E+12	10.	50.315
S	1.0	45.17	44.87	62.562	.495546528E+12	12.	57.287
S	1.5	42.09	43.67	72.365	.523156699E+12	15.	61.483
S	2.0	39.37	42.59	82.714	.549920621E+12	17.	67.080
S	3.0	36.70	40.01	95.033	.623154418E+12	20.	75.846
S	4.0	35.22	36.60	99.734	.744653845E+12	23.	88.088
S	5.0	34.58	33.71	100.000	.877766895E+12	26.	100.000 *
S	6.0	34.31	31.74	100.000	.990609426E+12	27.	100.000 *
R	0.5	89.25	47.58	24.890	.440682900E+12	2.	28.708
R	1.0	69.69	47.14	29.632	.448969704E+12	5.	36.765
R	1.5	57.27	46.26	38.067	.466142430E+12	9.	44.742
R	2.0	47.83	44.69	54.080	.499477374E+12	13.	58.203
R	2.5	43.09	42.78	70.770	.545047814E+12	16.	64.609
R	3.0	39.33	40.68	87.967	.602812098E+12	19.	77.937
R	4.0	36.25	37.72	99.696	.701344032E+12	22.	94.079
R	5.0	34.89	34.63	100.000	.832153705E+12	25.	100.000 *

RANGE OF LIVES

FREQUENCY

0-9	0
10-19	0
20-29	0
30-39	11
40-49	5
50-59	5
60-69	0
70-79	2
GREATER THAN 80	4

MEAN VALUE OF BEST FITTING LIVES IS 52.08 YEARS

MANAGEMENT RESOURCES INTERNATIONAL, INC. SPR BALANCES PROGRAM  
 CHESAPEAKE UTILITIES CORP-DELAWARE DIV.  
 PROPERTY CLASSIFICATION - GAS  
 ACCOUNT 380.00 DISTR SERVICES  
 NO. OF BALANCES 10 BAL. INTERVAL 1

02/14/07 PAGE 4  
 CO. NO. 1  
 DATA IN DOLLARS AS OF 12/31/2005  
 LOCATION 1 TOTAL ACCOUNT  
 ADDS/SURV TO 1954

TYPE	SUBTYPE	LIFE	CINDEX	RINDEX	SIGMA	RANK	CYCLE INDEX
L	0.0	93.65	101.85	28.376	.100341990E+12	3.	14.471
L	0.5	76.35	100.99	33.620	.102061472E+12	6.	18.035
L	1.0	62.26	100.34	42.324	.103390164E+12	8.	27.298
L	1.5	54.34	98.59	50.929	.107092135E+12	11.	31.590
L	2.0	47.90	98.12	61.908	.108122679E+12	12.	39.530
L	3.0	41.56	94.31	78.093	.117032285E+12	17.	53.409
L	4.0	38.26	87.08	91.546	.137271322E+12	21.	65.975
L	5.0	36.98	80.23	98.061	.161724431E+12	24.	76.512
SC		127.01	102.36	20.274	.993459153E+11	1.	20.274
S	- .5	89.04	101.74	25.465	.100563579E+12	4.	28.920
S	0.0	63.55	100.59	36.933	.102867723E+12	7.	40.517
S	0.5	55.00	99.16	44.910	.105872741E+12	10.	46.820
S	1.0	47.95	97.53	56.707	.109441231E+12	13.	53.975
S	1.5	44.51	95.71	66.094	.113635789E+12	15.	58.142
S	2.0	41.49	94.49	76.770	.116579280E+12	16.	63.656
S	3.0	38.61	91.28	91.064	.124923068E+12	19.	72.095
S	4.0	37.04	84.57	98.926	.145534770E+12	23.	83.749
S	5.0	36.46	75.33	99.989	.183449044E+12	26.	95.443
S	6.0	36.23	67.46	100.000	.228764318E+12	27.	100.000 *
R	0.5	100.96	102.13	21.645	.997997818E+11	2.	25.377
R	1.0	77.54	101.42	25.407	.101193712E+12	5.	33.044
R	1.5	62.62	99.93	32.230	.104234145E+12	9.	40.914
R	2.0	51.37	97.03	46.231	.110569760E+12	14.	54.188
R	2.5	45.60	93.19	62.348	.119854603E+12	18.	61.044
R	3.0	41.24	89.10	81.518	.131120519E+12	20.	74.340
R	4.0	37.93	84.67	98.274	.145202384E+12	22.	89.924
R	5.0	36.61	78.69	100.000	.168121609E+12	25.	100.000 *

RANGE OF LIVES

FREQUENCY

0-9	0
10-19	0
20-29	0
30-39	8
40-49	7
50-59	3
60-69	3
70-79	2
GREATER THAN 80	4

MEAN VALUE OF BEST FITTING LIVES IS 56.37 YEARS



## **Appendix B.3.**

### **Theoretical Reserve Calculation**

**Appendix B.3.a.**

**Account 376 Mains**

CHESAPEAKE UTILITIES-DELAWARE DIV.  
 PROPERTY CLASSIFICATION - GAS  
 ACCOUNT 376.00 DISTR. MAINS  
 SPAN 0 BAND 0 LAP 0  
 DATA TYPE - GROSS ADDITIONS  
 INDEX ID - 0 .00 0

CO. NO. 1  
 DATA IN DOLLARS AS OF 12/31/2005  
 LOCATION 1 TOTAL ACCOUNT  
 ADDS/SURV 1954  
 CALCULATION METHOD - DIRECT REMAINING LIFE  
 INDEX DESCRIPTION -

PERIOD 1 SPAN 0 DISPERSION S 1.0 AVERAGE LIFE 60.0

YEAR	AGE	ADDITIONS	SURV FACTR	SVG PLANT	ADJ SVG PLANT	REM LIFE	RATIO	RESERVE	AVG BAL	ACCRUAL
2005	.500	3548787.	1.00000	3548787.	3567014.	59.5	.00833	29725.	3566943.	
2004	1.500	2000959.	.99996	2000879.	2011156.	58.5	.02496	50200.	2011057.	
2003	2.500	1596973.	.99986	1596752.	1604953.	57.5	.04153	66658.	1604779.	
2002	3.500	1181709.	.99965	1181289.	1187357.	56.5	.05799	68859.	1187140.	
2001	4.500	938998.	.99928	938321.	943141.	55.5	.07432	70094.	942892.	
2000	5.500	748987.	.99875	748054.	751896.	54.6	.09050	68049.	751623.	
1999	6.500	1436459.	.99803	1433627.	1440990.	53.6	.10651	153487.	1440299.	
1998	7.500	2345021.	.99707	2338150.	2350160.	52.7	.12233	287499.	2348761.	
1997	8.500	1331042.	.99588	1325563.	1332371.	51.7	.13796	183817.	1331401.	
1996	9.500	1935707.	.99443	1924931.	1934818.	50.8	.15338	296772.	1933127.	
1995	10.500	2124065.	.99270	2108549.	2119378.	49.9	.16858	357295.	2117213.	
1994	11.500	1183691.	.99067	1172643.	1178666.	49.0	.18357	216363.	1177278.	
1993	12.500	901897.	.98833	891375.	895953.	48.1	.19833	177690.	894744.	
1992	13.500	604946.	.98567	596274.	599337.	47.2	.21285	127566.	598428.	
1991	14.500	395469.	.98268	388618.	390614.	46.4	.22714	88726.	389950.	
1990	15.500	514747.	.97934	504110.	506699.	45.5	.24120	122217.	505743.	
1989	16.500	601144.	.97564	586500.	589512.	44.7	.25503	150342.	588289.	
1988	17.500	456138.	.97159	443179.	445455.	43.9	.26862	119660.	444443.	
1987	18.500	516011.	.96717	499072.	501635.	43.1	.28199	141456.	500391.	
1986	19.500	289712.	.96238	278812.	280244.	42.3	.29512	82705.	279493.	
1985	20.500	324458.	.95722	310577.	312172.	41.5	.30803	96159.	311268.	
1984	21.500	214512.	.95168	204146.	205194.	40.8	.32072	65810.	204554.	
1983	22.500	186140.	.94574	176039.	176943.	40.0	.33317	58953.	176354.	
1982	23.500	107004.	.93943	100523.	101039.	39.3	.34542	34901.	100680.	
1981	24.500	233849.	.93274	218121.	219241.	38.6	.35745	78368.	218409.	
1980	25.500	172036.	.92566	159247.	160065.	37.8	.36927	59107.	159421.	
1979	26.500	206461.	.91822	189576.	190550.	37.1	.38089	72578.	189737.	
1978	27.500	108203.	.91038	98506.	99012.	36.5	.39230	38843.	98566.	
1977	28.500	73217.	.90217	66054.	66393.	35.8	.40351	26791.	66078.	
1976	29.500	110267.	.89360	98534.	99040.	35.1	.41454	41056.	98545.	
1975	30.500	93968.	.88466	83129.	83556.	34.5	.42537	35542.	83117.	
1974	31.500	207165.	.87535	181341.	182272.	33.8	.43602	79474.	181267.	
1972	33.500	87102.	.85569	74532.	74915.	32.6	.45678	34220.	74462.	
1971	34.500	83782.	.84533	70824.	71188.	32.0	.46690	33237.	70738.	
1970	35.500	103588.	.83466	86461.	86905.	31.4	.47685	41441.	86332.	
1969	36.500	137751.	.82366	113460.	114043.	30.8	.48664	55498.	113259.	
1968	37.500	173884.	.81234	141253.	141978.	30.2	.49627	70460.	140964.	
1967	38.500	163278.	.80073	130741.	131413.	29.7	.50575	66462.	130435.	
1966	39.500	115461.	.78881	91077.	91545.	29.1	.51508	47153.	90836.	
1965	40.500	170382.	.77660	132319.	132998.	28.5	.52426	69725.	131931.	
1964	41.500	167012.	.76413	127619.	128275.	28.0	.53330	68409.	127205.	
1963	42.500	122775.	.75139	92252.	92726.	27.5	.54219	50275.	91925.	
1962	43.500	50776.	.73841	37493.	37686.	26.9	.55095	20763.	37348.	
1961	44.500	62904.	.72518	45617.	45851.	26.4	.55958	25658.	45426.	
1960	45.500	51536.	.71174	36680.	36869.	25.9	.56809	20945.	36515.	
1959	46.500	63998.	.69807	44675.	44905.	25.4	.57646	25886.	44459.	
1958	47.500	26175.	.68422	17909.	18001.	24.9	.58472	10526.	17817.	
1957	48.500	24518.	.67017	16431.	16516.	24.4	.59286	9791.	16340.	
1956	49.500	22054.	.65596	14466.	14541.	23.9	.60088	8737.	14381.	
1955	50.500	32879.	.64158	21095.	21203.	23.5	.60880	12908.	20963.	
1954	51.500	249099.	.62707	156202.	157004.	23.0	.61660	96809.	155170.	
TOTAL				27842385.	27985387.			4315663.	27948493.	
				ADJUST FOR SALVAGE FACTOR 1.00				4315663.		

CHESAPEAKE UTILITIES-DELAWARE DIV.  
 PROPERTY CLASSIFICATION - GAS  
 ACCOUNT 376.00 DISTR. MAINS  
 SPAN 0 BAND 0 LAP 0  
 DATA TYPE - GROSS ADDITIONS  
 INDEX ID - 0 .00 0

CO. NO. 1  
 DATA IN DOLLARS AS OF 12/31/2005  
 LOCATION 1 TOTAL ACCOUNT  
 ADDS/SURV 1954  
 CALCULATION METHOD - DIRECT REMAINING LIFE  
 INDEX DESCRIPTION -

PERIOD 1 SPAN 0 DISPERSION S 1.0 AVERAGE LIFE 60.0

AVERAGE AGE 10.3	AGE/LIFE RSV 4795633.	TERMINAL AGE 119.4
	2005 EOY	2006 AVERAGE
DEPRECIABLE GROSS PLANT	27985387.	27948493.
AVERAGE REMAINING LIFE	50.75	50.81
AVERAGE CONSUMED LIFE	9.25	9.19

**Appendix B.3.b.**

**Account 380 Services**

CHESAPEAKE UTILITIES-DELAWARE DIV.

CO. NO. 1

PROPERTY CLASSIFICATION - GAS

DATA IN DOLLARS AS OF 12/31/2005

ACCOUNT 380.00 DISTR SERVICES

LOCATION 1 TOTAL ACCOUNT

SPAN 0 BAND 0 LAP 0

ADDS/SURV 1954

DATA TYPE - GROSS ADDITIONS

CALCULATION METHOD - DIRECT REMAINING LIFE

INDEX ID - 0 .00 0

INDEX DESCRIPTION -

PERIOD 1 SPAN 0 DISPERSION S 0.5 AVERAGE LIFE 50.0

YEAR	AGE	ADDITIONS	SURV FACTR	SVG PLANT	ADJ SVG PLANT	REM LIFE	RATIO	RESERVE	AVG BAL	ACCRUAL
2005	.500	1768347.	.99989	1768153.	1798170.	49.5	.00989	17785.	1797595.	
2004	1.500	1817394.	.99925	1816031.	1846862.	48.5	.02926	54046.	1845827.	
2003	2.500	1091692.	.99813	1089650.	1108149.	47.6	.04819	53397.	1107283.	
2002	3.500	1117285.	.99657	1113452.	1132355.	46.7	.06671	75542.	1131213.	
2001	4.500	998326.	.99456	992895.	1009751.	45.8	.08485	85674.	1008513.	
2000	5.500	925420.	.99212	918127.	933714.	44.9	.10262	95819.	932359.	
1999	6.500	761348.	.98924	753155.	765942.	44.0	.12004	91943.	764660.	
1998	7.500	544275.	.98593	536617.	545727.	43.1	.13712	74829.	544687.	
1997	8.500	656933.	.98217	645220.	656174.	42.3	.15385	100955.	654774.	
1996	9.500	566260.	.97798	553791.	563192.	41.5	.17027	95896.	561856.	
1995	10.500	497239.	.97334	483983.	492199.	40.7	.18637	91729.	490915.	
1994	11.500	423735.	.96826	410286.	417251.	39.9	.20215	84347.	416059.	
1993	12.500	426388.	.96273	410497.	417465.	39.1	.21762	90851.	416171.	
1992	13.500	429401.	.95676	410834.	417808.	38.4	.23281	97268.	416409.	
1991	14.500	368894.	.95035	350578.	356530.	37.6	.24770	88312.	355245.	
1990	15.500	385512.	.94350	363731.	369906.	36.9	.26231	97030.	368478.	
1989	16.500	337327.	.93622	315812.	321174.	36.2	.27665	88853.	319848.	
1988	17.500	378726.	.92849	351643.	357613.	35.5	.29071	103963.	356044.	
1987	18.500	287078.	.92034	264209.	268695.	34.8	.30452	81824.	267444.	
1986	19.500	311047.	.91177	283603.	288418.	34.1	.31808	91740.	286996.	
1985	20.500	233271.	.90278	210592.	214168.	33.4	.33139	70973.	213051.	
1984	21.500	151283.	.89337	135152.	137446.	32.8	.34445	47344.	136691.	
1983	22.500	137961.	.88356	121897.	123966.	32.1	.35729	44291.	123251.	
1982	23.500	199969.	.87336	174645.	177610.	31.5	.36990	65697.	176533.	
1981	24.500	158246.	.86277	136530.	138848.	30.9	.38229	53080.	137965.	
1980	25.500	132246.	.85180	112647.	114560.	30.3	.39446	45189.	113797.	
1979	26.500	118496.	.84046	99591.	101282.	29.7	.40643	41164.	100577.	
1978	27.500	67818.	.82876	56205.	57159.	29.1	.41819	23903.	56744.	
1977	28.500	32621.	.81672	26642.	27095.	28.5	.42976	11644.	26889.	
1976	29.500	39299.	.80434	31610.	32146.	27.9	.44114	14181.	31892.	
1975	30.500	38396.	.79163	30395.	30911.	27.4	.45232	13982.	30657.	
1974	31.500	25732.	.77862	20035.	20376.	26.8	.46334	9441.	20201.	
1973	32.500	46642.	.76531	35696.	36302.	26.3	.47418	17214.	35979.	
1972	33.500	45671.	.75172	34332.	34915.	25.8	.48486	16929.	34593.	
1971	34.500	69693.	.73785	51423.	52296.	25.2	.49536	25905.	51796.	
1970	35.500	58558.	.72373	42380.	43100.	24.7	.50571	21796.	42672.	
1969	36.500	90916.	.70937	64493.	65588.	24.2	.51591	33837.	64914.	
1968	37.500	85375.	.69479	59318.	60325.	23.7	.52596	31728.	59682.	
1967	38.500	91697.	.67999	62353.	63412.	23.2	.53586	33980.	62713.	
1966	39.500	69345.	.66500	46114.	46897.	22.7	.54562	25588.	46362.	
1965	40.500	61867.	.64983	40203.	40886.	22.2	.55525	22702.	40403.	
1964	41.500	64503.	.63450	40927.	41622.	21.8	.56475	23506.	41114.	
1963	42.500	42544.	.61902	26336.	26783.	21.3	.57411	15376.	26445.	
1962	43.500	47425.	.60341	28617.	29103.	20.8	.58335	16977.	28723.	
1961	44.500	32229.	.58769	18941.	19262.	20.4	.59248	11412.	19003.	
1960	45.500	22348.	.57188	12780.	12997.	19.9	.60149	7818.	12817.	
1959	46.500	25512.	.55599	14184.	14425.	19.5	.61038	8805.	14218.	
1958	47.500	17449.	.54004	9423.	9583.	19.0	.61917	5934.	9441.	
1957	48.500	13172.	.52404	6903.	7020.	18.6	.62785	4407.	6913.	
1956	49.500	11036.	.50802	5607.	5702.	18.2	.63643	3629.	5612.	
1955	50.500	13469.	.49198	6626.	6739.	17.8	.64490	4346.	6629.	
1954	51.500	94466.	.47596	44962.	45725.	17.3	.65329	29872.	44957.	
TOTAL				15639827.	15905341.			2464452.	15865611.	
								2464452.		

ADJUST FOR SALVAGE FACTOR 1.00

CHESAPEAKE UTILITIES-DELAWARE DIV.

CO. NO. 1

PROPERTY CLASSIFICATION - GAS

DATA IN DOLLARS AS OF 12/31/2005

ACCOUNT 380.00 DISTR SERVICES

LOCATION 1 TOTAL ACCOUNT

SPAN 0 BAND 0 LAP 0

ADDS/SURV 1954

DATA TYPE - GROSS ADDITIONS

CALCULATION METHOD - DIRECT REMAINING LIFE

INDEX ID - 0 .00 0

INDEX DESCRIPTION -

PERIOD 1 SPAN 0 DISPERSION S 0.5 AVERAGE LIFE 50.0

AVERAGE AGE 9.5 AGE/LIFE RSV 3019785. TERMINAL AGE 100.0

2005 EOY

2006 AVERAGE

DEPRECIABLE GROSS PLANT 15905341.

15865611.

AVERAGE REMAINING LIFE 42.25

42.36

AVERAGE CONSUMED LIFE 7.75

7.64

## **Appendix C**

### **Calculation of COR Rates (Schedule A, Column 11)**



**CHESAPEAKE UTILITIES CORP.-DELAWARE DIVISION  
CALCULATION OF COR RATES**

- A. Proposed COR = x%  
 B. W.L. Rate w/o COR = 100/ASL  
 C. W.L. Rate w/ COR = w.l. Rate \* COR  
 D. COR Rate = W.L. Rate w/COR - W.L. Rate w/o COR

**PRODUCTION PLANT**

304.10                      ASL= 50.0      N.S.=              0

- |                      |             |
|----------------------|-------------|
| A. Proposed COR      | 0           |
| B. W.L. Rate w/o COR | 2.00        |
| C. W.L. Rate w/ COR  | 2.00        |
| D. COR Rate =        | <u>0.00</u> |

305.00                      ASL= 48.0      N.S.=              0

- |                      |             |
|----------------------|-------------|
| A. Proposed COR      | 0           |
| B. W.L. Rate w/o COR | 2.08        |
| C. W.L. Rate w/ COR  | 2.08        |
| D. COR Rate =        | <u>0.00</u> |

311.00                      ASL= 34.0      N.S.=              0

- |                      |             |
|----------------------|-------------|
| A. Proposed COR      | 0           |
| B. W.L. Rate w/o COR | 2.94        |
| C. W.L. Rate w/ COR  | 2.94        |
| D. COR Rate =        | <u>0.00</u> |

**DISTRIBUTION PLANT**

376.00                      ASL= 60.0      N.S.=              -70

- |                      |             |
|----------------------|-------------|
| A. Proposed COR      | 70          |
| B. W.L. Rate w/o COR | 1.67        |
| C. W.L. Rate w/ COR  | 2.84        |
| D. COR Rate =        | <u>1.17</u> |

378.00                      ASL= 29.0      N.S.=              0

- |                      |             |
|----------------------|-------------|
| A. Proposed COR      | 0           |
| B. W.L. Rate w/o COR | 3.45        |
| C. W.L. Rate w/ COR  | 3.45        |
| D. COR Rate =        | <u>0.00</u> |

**CHESAPEAKE UTILITIES CORP.-DELAWARE DIVISION  
CALCULATION OF COR RATES**

- A. Proposed COR = x%  
 B. W.L. Rate w/o COR= 100/ASL  
 C. W.L. Rate w/ COR = w.l. Rate \* COR  
 D. COR Rate = W.L. Rate w/COR - W.L. Rate w/o COR

**379.00**                      ASL= 29.0      N.S.=              0

- |                      |             |
|----------------------|-------------|
| A. Proposed COR      | 0           |
| B. W.L. Rate w/o COR | 3.45        |
| C. W.L. Rate w/ COR  | 3.45        |
| D. COR Rate =        | <u>0.00</u> |

**380.00**                      ASL= 50.0      N.S.=              -150

- |                      |             |
|----------------------|-------------|
| A. Proposed COR      | 150         |
| B. W.L. Rate w/o COR | 2.00        |
| C. W.L. Rate w/ COR  | 5.00        |
| D. COR Rate =        | <u>3.00</u> |

**381.00**                      ASL= 49.0      N.S.=              0

- |                      |             |
|----------------------|-------------|
| A. Proposed COR      | 0           |
| B. W.L. Rate w/o COR | 2.04        |
| C. W.L. Rate w/ COR  | 2.04        |
| D. COR Rate =        | <u>0.00</u> |

**382.00**                      ASL= 35.0      N.S.=              -40

- |                      |             |
|----------------------|-------------|
| A. Proposed COR      | 40          |
| B. W.L. Rate w/o COR | 2.86        |
| C. W.L. Rate w/ COR  | 4.00        |
| D. COR Rate =        | <u>1.14</u> |

**383.00**                      ASL= 50.0      N.S.=              0

- |                      |             |
|----------------------|-------------|
| A. Proposed COR      | 0           |
| B. W.L. Rate w/o COR | 2.00        |
| C. W.L. Rate w/ COR  | 2.00        |
| D. COR Rate =        | <u>0.00</u> |

**CHESAPEAKE UTILITIES CORP.-DELAWARE DIVISION  
CALCULATION OF COR RATES**

- A. Proposed COR = x%  
 B. W.L. Rate w/o COR= 100/ASL  
 C. W.L. Rate w/ COR = w.l. Rate \* COR  
 D. COR Rate = W.L. Rate w/COR - W.L. Rate w/o COR

**385.00**                      ASL= 26.0      N.S.=                      0

A. Proposed COR	0
B. W.L. Rate w/o COR	3.85
C. W.L. Rate w/ COR	3.85
D. COR Rate =	<u>0.00</u>

**387.00**                      ASL= 26.0      N.S.=                      0

A. Proposed COR	0
B. W.L. Rate w/o COR	3.85
C. W.L. Rate w/ COR	3.85
D. COR Rate =	<u>0.00</u>

**GENERAL PLANT**

**391.00**                      ASL= 22.0      N.S.=                      5

A. Proposed COR	0
B. W.L. Rate w/o COR	4.55
C. W.L. Rate w/ COR	4.55
D. COR Rate =	<u>0.00</u>

**392.00**                      ASL= 8.0      N.S.=                      10

A. Proposed COR	0
B. W.L. Rate w/o COR	12.50
C. W.L. Rate w/ COR	12.50
D. COR Rate =	<u>0.00</u>

**394.00**                      ASL= 37.0      N.S.=                      0

A. Proposed COR	0
B. W.L. Rate w/o COR	2.70
C. W.L. Rate w/ COR	2.70
D. COR Rate =	<u>0.00</u>

**CHESAPEAKE UTILITIES CORP.-DELAWARE DIVISION  
CALCULATION OF COR RATES**

- A. Proposed COR = x%  
 B. W.L. Rate w/o COR = 100/ASL  
 C. W.L. Rate w/ COR = w.l. Rate \* COR  
 D. COR Rate = W.L. Rate w/COR - W.L. Rate w/o COR

395.00                      ASL= 32.0      N.S.=              0

A. Proposed COR	0
B. W.L. Rate w/o COR	3.13
C. W.L. Rate w/ COR	3.13
D. COR Rate =	<u>0.00</u>

396.00                      ASL= 15.0      N.S.=              20

A. Proposed COR	0
B. W.L. Rate w/o COR	6.67
C. W.L. Rate w/ COR	6.67
D. COR Rate =	<u>0.00</u>

397.00                      ASL= 6.0      N.S.=              0

A. Proposed COR	0
B. W.L. Rate w/o COR	16.67
C. W.L. Rate w/ COR	16.67
D. COR Rate =	<u>0.00</u>

398.00                      ASL= 25.0      N.S.=              0

A. Proposed COR	0
B. W.L. Rate w/o COR	4.00
C. W.L. Rate w/ COR	4.00
D. COR Rate =	<u>0.00</u>

## **Appendix D**

### **Depreciation Accrual Rate Schedule Stone & Webster Management Consultants Depreciation Report – 1990**

ACCOUNT NUMBER AND DESCRIPTION	PLANT BALANCE	EST. SALVAGE OR RETIREMENT COST PCT	ESTIMATED MORT. SERVICE DISPERS VALUE YRS CRV	BOOK DEPRE. RESERVE	UNRECOVERED EST. SERVICE RBM. VALUE LIFE	ANNUAL DEPRECIATION AMOUNT PCT.
Production Plant						
1 LAND AND LAND RIGHTS	1451		1451	FORECAST	156	1295 34.0 38 2.62
STRUCTURES AND IMPROVEMENTS	590287		590287	41 R2.5	100292	489995 34.0 14412 2.44
LIQUEFIED PETROLEUM GAS EQUIPMENT	793658	15	119049	674609 34 R4	142659	531950 28.8 18470 2.33
TOTAL	1385396		119049	1266347	243107	1023240 32920 2.38
Distribution Plant						
MAINS	5459632	-75	-4094724	9554356 46 R1.5	1306396	8247960 37.2 221719 4.06
MEASURING AND REGULATING STATION EQUIPMENT-GENERAL	32436			32436 31 R4	13838	18598 17.4 1069 3.30
MEASURING AND REGULATING STATION EQUIPT-CITY GATE CHECK STA	182052	15	27308	154744 26 S0	47819	106925 21.1 5068 2.78
SERVICES	3300470	-120	-3960564	7261034 32 S0.5	1108359	6152675 25.1 245126 7.43
METERS	1089043	10	108904	980139 44 R3	225722	754417 33.7 22386 2.06
METER INSTALLATIONS	522988	-55	-287643	810631 27 S1	194938	615693 20.4 30181 5.77
HOUSE REGULATORS	318501			318501 40 R4	76973	241528 29.3 8243 2.59
INDUSTRIAL MEASURING AND REGULATING EQUIPMENT	146915	20	29383	117532 22 S1.5	41083	76449 16.5 4633 3.15
OTHER EQUIPMENT	66881			66881 26 S6	19537	47344 18.9 2505 3.75
TOTAL	11118918		-8177336	19296254	3034665	16261589 540930 4.86
General Plant						
OFFICE FURNITURE AND EQUIPMENT	74191			74191 18 L3	25937	48254 10.4 4640 6.25
OFFICE FURNITURE AND EQUIPMENT	40592	10	4059	36533 7 S0	1098	35435 6.5 5452 13.43
TRANSPORTATION EQUIPMENT	318463	15	47769	270694 9 R5	141284	129410 4.5 28758 9.03
TOOLS SHOP AND GARAGE EQUIPMENT	126088			126088 29 S1	31083	95005 22.8 4167 3.30
LABORATORY EQUIPMENT	1658			1658 32 S4	1466	192 6.6 29 1.75
POWER OPERATED EQUIPMENT	173053	20	34611	138442 14 R4	62166	76276 8.8 8668 5.01
COMMUNICATIONS EQUIPMENT	34441			34441 22 R2	16461	17980 14.3 1257 3.65
MISCELLANEOUS EQUIPMENT	3906			3906 27 R4	1482	2424 18.7 130 3.33
OTHER TANGIBLE PROPERTY	475			475 30 S0	647	-172 4.5 0 3.33
TOTAL	772867		86439	686428	281624	404804 53101 6.87
TOTAL DEPRECIABLE PLANT	13277181		-7971848	21249029	3559396	17689633 626951 4.72